THE CHEMIST AND DRUGGIST.

Vol. II.] AUGUST 15th, 1861. [No. 24.

TRADE LAWS.—1861.

It is one thing to take a horse to a brook; it is another thing to make him drink. It is one thing to build a house; it is another thing to get any one to live in it. It is one thing to organize a system; it is another thing to make people use it and believe in it.

Those legislators who framed the last Bankruptcy Bill have been painfully alive to these truths for some time past, and have been tinkering at their pet measure for several years. Sir Richard Bethell, now Lord Westbury, and Lord Chancellor, has been striving for many weary sessions to get an act passed to make the Bankruptcy Court more popular with the trading classes as a place for winding up insolvent estates. The leading features of his last thrice-withdrawn and thrice-amended Bill we detailed in our number for February 28th, 1861, and since then the measure has been worried by the law lords in the Upper House, and sent down again, much mutilated, to the Commons. It has been again discussed by the Lower House, and many of the alterations suggested by the Lords have been objected to; while a committee has been appointed to draw up reasons for these objections. It has been again sent up to the House of Lords, discussed with much obstinacy and party feeling, and the objections of the House of Commons have been again objected to. A committee of peers has also been appointed to draw up the reasons for these last objections. When this work is completed, the Bill will be sent down to the House of Commons again, and passed or rejected, according to the temper of both assemblies. What the child will be after all this rough nursing few people can tell. The chief points on which the two Houses have quarrelled have been the extra chief judgeship, with its 5,000*l.* a-year; the reduction of the official assignees in number and power; and the extended duties and authority proposed to be given to the creditors' assignee. The clauses by which non-traders are brought under the operation of the Act have been retained, but limited so that they shall reach no debts incurred previous to the passing of the Bill. Estates as small as five pounds it is proposed to take for administration into the Court, although no small traders appear to think that they will obtain any benefit from the new regulation. The House of Lords has been opposed to the creation of a new judgeship in connection with the Court, as something savouring very much of a job, and there has been much abuse on both sides of official and creditors' assignees. The facts cannot be got over that the defalcations of official assignees reach a sum of between three and four thousand pounds sterling per annum, and that two millions sterling is now lying in the Bank of England as unclaimed bankruptcy dividends. This dishonesty and bad administration have made the Court deservedly unpopular with the trading classes; and the heavy "per-centages" and charges exacted for costs have caused private arrangements to be the rule in cases of insolvency.

The returns recently made respecting the judicial proceedings of the year 1860 show of what small amount the mass of bankruptcy and insolvency cases are, and how ill able to bear an expensive system of administration. About 1000 bankrupts had their balance-sheets passed in the course of the year, and in 866 instances the debts owing by the bankrupt were under 5,000*l.*; in 398 under 1,000*l.*; dividends were made in 968 cases, and in 562 of them the dividend was under 2*s.* 6*d.* In the Insolvent Debtors' Court 5,817 schedules were filed in the year, and in 5,184 instances the debts owing by the insolvents were under 1,000*l.*; dividends were made in 701 cases, and in 593 of them the dividend was under 2*s.* 6*d.* The returns of the Bankruptcy Court state that the sum realized for administration by that Court in the year was 1,080,656*l.*, and the charges amounted to 329,440*l.*, or 30*l.* 9*s.* 8*d.* per cent. This sum was apportioned as follows:—

Official assignees	£45,459	0	0
Solicitors	127,690	0	0
The Court (for its per-centage)	26,566	0	0
Messengers	28,195	0	0
Brokers, auctioneers, and accountants	23,598	0	0
Total of Court charges...	£251,508	0	0

The bankrupts' allowance and excepted articles amounted to 31,265*l.*, and 9,497*l.* was allowed for their accountants; and "other charges"—including charges for carrying on trade—took 37,170*l.* The Insolvent Debtors' Court realized 55,952*l.* for administration, and the expenses of such administration were 11,963*l.*, or 21*l.* 7*s.* 7*d.* per cent.

These facts and figures show that the proposed new combined Bankruptcy and Insolvency Court will not be used by the trading classes, to any extent, if the machinery is found to be clumsy and expensive after a year's trial. A year's tasting will test the practical value of the new Bill now being tossed backwards and forwards like a shuttlecock, and without this all premature discussions are more or less idle. When the host of clauses are at last settled, and the Bill becomes law, we may possibly give a summary of its chief provisions.

The Trade Marks' Bill, after all the labour and ingenuity expended upon it—after all the suggestions and representations of various deputations who waited at different times upon Mr. Milner Gibson—has met the fate of most commercial measures left for consideration until the latter part of July. It has been withdrawn in as decent a manner as possible, professedly with "a view to its re-introduction next session, and its reference to a select committee." What it will become eventually—if it is ever fated to have an active substantial existence—no man can tell; and we can only wait and watch, and watch and wait.

A bill concerning the old metal trade is now all but passed, for regulating the business of dealers in old metals. It provides, that if any such dealer be found in possession of old metal suspected to have been unlawfully obtained, any police-officer may seize the same, and summon the dealer to appear before two justices. If the dealer is not able to prove that he came honestly by the metal, he may be found guilty of a misdemeanour, and will be liable to a penalty not exceeding five pounds, and for any subsequent offence to a penalty not exceeding twenty pounds.

ON THE ANALYSIS OF SOILS.

BY DR. HENRY M. NOAD, F.R.S.

PART I.—MECHANICAL ANALYSIS.

The opinion formerly entertained that the substances imperatively required by plants must be presented to them in the form of aqueous solution, has been entirely refuted by the researches of modern chemists. It is easy, indeed, by a single experiment to convince oneself that such is not the case. Take, for instance, the alkali *potash*, which is so essential to the growth of every plant, and especially to the *turnip:* a certain excellent wheat soil yielded to Anderson, by treatment with water, a quantity of potash amounting to not more than 70 lbs. per acre; nevertheless the crop of turnips, which grew luxuriantly on this soil, abstracted from it (tops included) not less than 200 lbs. of that alkali. To the roots of plants, then, must be attributed an inherent faculty of withdrawing and appropriating from the soil substances which neither water, nor water impregnated with carbonic acid, or even dilute mineral acids, are capable of withdrawing. A mere knowledge, therefore, of the solubility of the several constituents of a soil will not enable an agricultural chemist to judge of its fertility; and, indeed, an exact chemical analysis will often be worse than useless unless it be accompanied with a careful *mechanical* analysis, and an examination into the physical characters of the soil. This is well illustrated by the following analysis of two soils (Anderson), on one of which red clover grew luxuriantly, while on the other it invariably failed :—

	Clover failed.	Clover succeeded.
Insoluble silicates	83·90	81·34
Soluble silica	0·08	0·02
Peroxide of iron	4·45	6·68
Alumina	2·40	3·00
Lime	1·23	1·33
Magnesia	0·45	0·25
Potash	0·20	0·22
Soda	0·07	0·09
Sulphuric acid	0·05	0·08
Phosphoric acid	0·38	0·07
Carbonic acid	0·09	0·34
Chlorine	trace	trace
Humic acid	0·42	0·43
Insoluble matters (organic)	3·70	3·61
Water	2·54	2·52
	99·96	99·98

Here the little difference that there is, is rather in favour of the soil on which clover would *not* grow; and the cause of sterility is evidently to be ascertained only by an examination of the special properties of its mechanical constituents. The most important of these are *sand* and *clay*, the properties conferred by which on the soil are diametrically opposite; and the suitability of soils to particular crops is affected in a most important manner by the proportion in which these substances are mixed together. A thorough investigation of the physical characters of soils has not hitherto met with the attention its importance deserves, on account, probably, of the great amount of labour which it involves; indeed, Schübler is the only chemist who has published an elaborate series of researches on this subject. He determined—

1st. The specific gravity of the soil;
2nd. The quantity of water it is capable of imbibing;
3rd. The rapidity with which it gives off by evaporation the water it has imbibed;
4th. The extent to which it shrinks in drying;
5th. Its hygrometric power;
6th. The extent to which it is heated by the sun's rays;

7th. The rapidity with which a heated soil cools down, which indicates its power of retaining heat;

8th. Its tenacity, or the resistance it offers to the passage of agricultural implements; and,

9th. Its power of absorbing oxygen from the air.

Some of these are, however, of minor importance: but much useful information may be obtained by determining the specific gravity; its power of imbibing and retaining water; its hygrometric power; its tenacity; and its colour; and if to these experiments we add a determination of the relative proportions of gravel, and coarse and fine sand, we shall gain an amount of information which, when added to that obtained by a careful chemical analysis, cannot fail to be of paramount practical importance.

In the examination of soils, therefore, the analytical process is divided into two parts—viz., I. Mechanical Analysis; and, II. Chemical Analysis. In our present paper we shall consider the first of these operations.

Mechanical Analysis of a Soil.

(*a*). *Selection of the Sample.*—Too much care cannot be taken to obtain a fair average specimen. For this purpose one or two pounds should be taken from each of four or five different parts of the field where the soil appears to be nearly the same. These should be well mixed together, and a pound or so selected for analysis; all samples should be kept in well corked bottles. It is not unfrequent to see in a field otherwise fertile, a few patches almost barren where plants, especially when the field is in white crop, spring up, and for a time look quite healthy, but soon become diseased, assume a yellow colour, and die. Specimens from such parts should on no account be mixed with the rest; they should be examined by themselves, and the results compared with those given by the fertile parts: by following this course the cause of sterility and the means of curing it are most likely to be discovered.

(*b*). *Determination of water.*—Spread a weighed quantity (say half a pound) of the soil upon a sheet of white paper, and expose it to the air in a dry room for several hours, weighing it at intervals of two or three hours till the weight remains constant: the loss indicates the amount of water which has evaporated, but by no means the whole of the water which the soil contains. To determine which, heat about 500 grains of the air-dried soil in a small glass beaker plunged into an oil bath, the temperature of which is kept between 300° and 350° F., till it ceases to lose weight, the result gives a close approximation to the amount of water. *Absolute* desiccation cannot, however, be accomplished except at a heat close upon redness, which is, of course, inadmissible, as the organic matters the soil contains would thereby become altered or destroyed.

(*c*). *Absorbing power.*—Allow the 500 grains of soil dried as above to cool in a covered vessel; then spread it out on a sheet of paper, and expose it to the air for twenty-four hours: note the increase of weight which is due to absorption of water, and if it amounts to ten grains, it is so far an indication of great agricultural capability.

(*d*). *Power of holding water.*—Put 1000 grains of air-dried soil into a filter enclosed in another placed in a funnel; pour cold water drop by drop on the soil until it begins to trickle down the neck of the funnel; cover with a piece of glass, and allow it to stand for an hour or two, adding a few drops of water from time to time until it is certain that the whole soil is perfectly soaked; remove the filters from the funnel, and open them upon a linen cloth to remove the drops of water adhering to the paper. The outside filter is now placed in one pan of the balance, and the inner one containing the soil on the other; and the whole being carefully balanced, the true weight of the wet soil is obtained: suppose this to be 1400, then the soil is capable of holding 40 per cent. of water.

(*e*). *Rapidity of Drying.*—Expose the saturated soil with its filter on the plate to the air for four, twelve, or twenty-four hours, weighing from time to time. The loss of weight, indicating the tendency of the soil to dry, may convey useful information as to the necessity or otherwise of drainage.

(*f*). *Relative proportions of Gravel, Sand, and Clay.*—Rub a quantity of air-dried soil between the hands, and remove and weigh any *stones* which may be present. Weigh off 4,000 grains, and pass them through a sieve (No. 1) of copper wire gauge, the meshes of which are about $\frac{1}{15}$th of an inch in diameter.* Remove the sieve from its bottom, and place it over a deep evaporating basin ; throw a gentle stream of water upon the contents, and stir with a spatula or the hand until the water passes through clear. Transfer the residue to another basin, and place it in the water oven to dry ; then weigh, after which ignite in the air, and when cold weigh again. The first weighing gives the amount of *coarse gravel*, and the second indicates the proportion of *organic matter* which this gravel contains. Transfer the soil which has passed through sieve No. 1 to sieve No. 2, the meshes of which are about $\frac{1}{50}$th of an inch in diameter, treat the residue on the sieve precisely as before, dry at 212°, weigh, ignite, and weigh again ; the results give the amount of *gravelly sand*, and of organic matter mixed with it. Dry a portion of the soil which has passed through sieve No. 2 in the water oven, and weigh off 500 grains ; transfer to a deep basin or flask, and boil for twenty minutes or so, with water. The boiling must be continued until the particles are thoroughly separated from each other. The *coarse sand, fine sand*, and *finely divided particles* are then separated from each other by the following simple process, recommended by Schultz :—The boiled soil is allowed to cool, and is then washed into an *elutriating glass*, which is merely a tall champagne glass 7 or 8 inches deep and about 2¾ inches wide at the mouth, round which is fastened a brass ring about half an inch broad, with a tube slightly inclined downwards proceeding from its side. A gentle stream of water is caused to pass continuously into the elutriating glass in such a manner as to cause a constant agitation of the particles, whereby the finest are washed away through the tube at the top of the glass, and received in a beaker or any other convenient vessel. This stream of water is best kept up and regulated by causing it to flow from a reservoir provided with a stop-cock, to which is attached a tube funnel from 12 to 18 inches long, drawn out to a point, with a fine aperture. The end of this tube is placed nearly at the bottom of the elutriating glass, and the supply of water so adjusted that the funnel tube always remains half full of water. When the water runs off from the discharge tube nearly clear, the stop-cock of the reservoir is closed, and the elutriating glass being removed, the water is decanted from it, and it is washed into a small dish, where it is dried and weighed, after which it is ignited and weighed again ; the two weights give the proportion of *coarse sand* and its *organic matter.* The elutriated turbid fluid is allowed to stand for several hours, and the water is then poured off into another beaker. The deposited matter, consisting of *fine sand* and *fine soil*, is then subjected to a second elutriating process, conducted as before, except that the force and volume of the washing water is considerably lessened. The operation is continued until the wash water passes off quite clear ; this sometimes takes three or four hours, but it is, with the arrangement we have described, a self-acting process, requiring no personal superintendence. The residue in the elutriating glass is *fine sand*, which, with its organic matter, is estimated as before, by drying, weighing, igniting, and re-weighing. We have only now to deduct from the original 500 grains the quantities of *coarse* and *fine sand*, to obtain the proportion of finely-divided matter. The results of this mechanical analysis may be tabulated thus (Schultz) :—

(*Illustration*).—

		Fixed Substances.		Combustible Substances.
6·90	Gravel (coarse)	6·90	—	0·00
	Organic matter	..	—	..
7·10	Gravel (fine)	6·43	—	..
	Organic matter	..	—	0·67
35·50	Sand (coarse)	34·37	—	..
	Organic matter	..	—	1·13
40·0	Sand (fine)	38·50	—	..
	Organic matter	..	—	1·50
10·56	Fine soil	9·50	—	..
	Organic and other volatile substances	..	—	1·00
100·00		95·70		4·3

Stones, 2·10 per cent.

This mechanical treatment of soils we deem to be of high importance, and it is to be regretted that so few of our English soils have hitherto been so examined. The same remark applies to the analysis of *clays*, the chemical examination of which we described in this Journal (p. 44). In that paper we alluded to the importance of the information to be derived by combining a *mechanical* with a *chemical* analysis, and we promised to point out in a future communication a convenient method of effecting the former. The operations above described apply equally to *clays* and to *soils*, except that in the case of clays we have not to look for *gravel*. The following are the results of the mechanical analysis of two clays—one a "fat," and the other a "poor" variety:—

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* Sieves of various degrees of fineness provided with bottoms may be obtained at most of the philosophical nstrument makers, or they may readily be made.

	Fat Clay.		Poor Clay.
Coarse sand	6·66	—	24·68
Fine sand	9·66	—	11·29
Clay	74·82	—	57·82
Water	8·86	—	0·21
	100·00		100·00

These analyses well illustrate the usefulness of the mechanical analysis. To render the matter complete, however, the gravel and sand should be moistened and examined under the microscope, with the view of ascertaining if they are wholly siliceous, or if they contain also fragments of different kinds of rock—sandstones, slates, granites, traps, limestones, or ironstones. A few drops of strong hydrochloric acid should also be added, when the presence of limestone is shown distinctly by an effervescence; of peroxide of iron by the brown colour which the acid speedily assumes; and of black oxide of manganese by the smell of chlorine, which is easily recognised.

(*g*). *Determination of the density of a soil.*—Dry a sample of the soil (from which the large stones have been picked out) at 212° in the water oven till it ceases to lose weight. Fill a perfectly clean and dry common phial with distilled water up to a mark made with a file on the neck, and weigh it carefully. Pour out part of the water, and introduce into the bottle in its stead 1,000 grains of the dried soil; shake the bottle well, to allow the air to escape from the pores of the soil; fill up again with water to the mark on the neck, and again weigh. The weight of the soil divided by the difference between the weight of the bottle with soil and water, and the sum of the weights of soil and the bottle of water together, gives the density or specific gravity. Example—

	Grains.
The bottle with water alone weighs	2,000
The dry soil	1,000
Sum (being the weight which the bottle with the soil and water *would have had*, could the soil have been introduced without displacing any of the water)	3,000
Actual weight of soil and water	2,600
Difference (being the weight of water taken out to admit 1,000 grains of soil)	400

Therefore, 1,000 grains of soil have the same *bulk* as 400 grains of water: *i. e.*, the soil is 2½ times heavier than water, since $\frac{1{,}000}{400} = 2{\cdot}5$, its specific gravity.

(*h*). *Determination of the Absolute Weight.*—Weigh an exact imperial half-pint of the soil in any state of dryness. When this weight is multiplied by 150 it will give very nearly the weight of a cubic foot of the soil in that state.

In our next paper, the best method of analyzing a soil *chemically* will be described.

Pure Carbonate of Soda is prepared by W. Lienau from crude soda by dissolving it in distilled water, diluting with six or eight times the quantity, and precipitating lead and iron by a current of sulphuretted hydrogen. The sulphide of sodium is decomposed in contact with oxide of iron; a little bicarbonate of soda is added to neutralize some caustic soda; and the filtrate is evaporated and allowed to crystallize so long as pure crystals are formed.—*Amer. Jour. Pharmacy.*

THE NATURAL ORDERS OF PLANTS.

Rosaceæ.—The Rose Tribe.

This order, which belongs to the class Exogens, sub-class Calycifloræ, comprises several sub-orders which have been regarded by Lindley and other botanists as distinct orders, but possessing as they do many properties in common, we shall comprise them under one head. The order is chiefly remarkable for yielding many valuable edible fruits, for the presence of astringent and tonic matter, and the production of hydrocyanic acid when their leaves or kernels are moistened with water. Some plants are met with chiefly in the tropical parts of Africa and America, whilst the greater part are natives of the cold and temperate regions of the northern hemisphere. The order comprises about ninety genera, and one thousand species, about one half of which belong to the sub-order *Roseæ.* They consist of trees, shrubs, and herbs, some of which are climbers, as the Bramble and Rose; many of the species contribute very largely to the adornment of our gardens.

Botanical Characters.—The leaves are alternate, simple or compound, and usually stipulate (having leafy appendages at the base), occasionally dotted. The flowers are generally hermaphrodite (having male and female organs in the same flower), rarely unisexual (having only one organ, either male or female, in the same flower). The calyx (outer floral covering) monosepalous (the divisions of the calyx more or less united), four or five lobed, with a disk (a body seated on the receptacle between the stamens and the ovary), either lining the tube or surrounding the orifice; when there are five lobes, the fifth lobe is next the axis. The calyx is sometimes surrounded by a whorl of bracts, forming an epicalyx or involucre. The corolla (inner floral covering) consists of five petals, which are perigynous (adherent more or less to the calyx, so that their position as regards the pistil is somewhat lateral), sometimes, but rarely, there are none (as in Alchemilla). Stamens (male organs) either definite (under twenty in number) or numerous, perigynous. Anthers innate (cellular case on the apex of the stamen inserted upon the filament), two-celled, dehiscing longitudinally. Ovaries (part of female organ) one, two, five, or numerous, one-celled, generally apocarpous (separate from each other), and superior, as in the Rose; or sometimes more or less combined together, and with the tube of the calyx, thus becoming inferior (as in the Apple, or Quince). Styles (the thread-like body connecting the stigma and ovary) basilar (arising from the base), lateral or terminal. Fruit various, a drupe (as in the Peach, Plum, &c.), an achænium (as in Alchemilla), a follicle (as in Spiræa), a dry or succulent æterio (as in the Raspberry, and Pheasant's eye or Adonis), a cynarrhodum (as in the Rose), or a pome (as in the Apple). Seeds, one or few, exalbuminous.

Diagnosis.—Professor Bentley thus describes them:—"Trees, shrubs, or herbs, with alternate leaves. Flowers regular. Calyx four to five lobed; when five, the odd lobe posterior. Petals five or none. Stamens perigynous, distinct. Anthers two-celled. Carpels one or more, usually distinct, or sometimes united, generally superior, or occasionally more or less inferior. Seeds one or few, exalbuminous. Embryo straight."

Distinction from allied Orders.—By its perigynous stamens and exalbuminous seeds, from *Ranunculaceæ.* By its indefinite stamens and exalbuminous seeds, from *Saxifragaceæ.*

The order is thus divided by Professor Bentley:—

Sub-order 1.—*Chrysobalaneæ* (Order Chrysobalanaceæ, Lindley). *Trees or shrubs,* with simple leaves and free stipules. Carpel solitary, cohering more or less on one side with the calyx; ovules two, erect. Style basilar. Fruit a drupe. Seed, erect. Exs. Chrysobalanus, Moquilea, &c,

Sub-order 2.—*Amygdalaceæ* or *Drupaceæ* (Order Drupaceæ, Lindley). *Trees or shrubs,* with simple leaves and free stipules. Calyx deciduous. Carpel solitary, not adherent to the calyx. Style terminal. Fruit a drupe. Seed suspended. Exs. Amygdalus, Prunus, Cerasus.

Sub-order 3.—*Roseæ* (Order Rosacea, Lindley). *Shrubs or herbs,* with simple or compound leaves and adherent stipules. Carpels one or more, superior, not united to the tube of the calyx, distinct, or sometimes more or less coherent. Styles lateral, or nearly terminal. Fruit either an æterio, or consisting of several follicles. Seed usually suspended, or rarely ascending. Exs. Rosa, Rubus, Fragaria, Spiræa, Brayera, Quillaia, Lindelya, Neurada.

Sub-order 4 —*Sanguisorbeæ* (Order Sanguisorbaceæ, Lindley). *Herbs or under-shrubs*, flowers often unisexual. Petals frequently absent. Carpel solitary. Style terminal or lateral. Fruit an achænium, inclosed in the tube of the calyx, which is often indurated. Seed solitary, suspended or ascending. Exs. Alchemilla, Sanguisorba, Poterium.

Sub-order 5.—*Pomeæ* (Order Pomaceæ, Lindley). *Trees or shrubs*, with simple or compound leaves, and free stipules. Carpels one to five, adhering more or less to each other and to the sides of the calyx, and thus becoming inferior. Styles terminal. Fruit a pome, one to five-celled, or rarely spuriously ten-celled. Seeds ascending. Exs. Cydonia, Pyrus, Mespylus, Cotoneaster, Cratægus.

SUB-ORDER, CHRYSOBALANEÆ.

GENERAL PROPERTIES.—The plants of this sub-order (natural order Chrysobalanaceæ of Lindley) are principally natives of the tropical parts of America and Africa. Many of them produce edible drupaceous fruits.

PRINCIPAL PLANTS AND USES.

CHRYSOBALANUS.—The fruit of the species *Icaco* is known in the West Indies under the name of Cocoa Plum; and the roots, bark, and leaves are prescribed in Brazil against diarrhœa, leuchorrhœa, and other similar maladies. The fruit of the species *Luteus* is eaten in Sierra Leone.

MOQUILEA.—The species *Grandiflora* is said to yield eatable drupes in Brazil.

PARINARIUM.—The species *Excelsum* yields the rough-skinned or Grey Plum of Sierra Leone. The kernels of the species *Campestre* and *Montanum* are stated by Aublet to be sweet and edible, resembling those of the almond in flavour.

PRINSEPIA.—According to Royle the seeds of the species *Utilis* yield, by expression, a useful oil.

SUB-ORDER, AMYDALEÆ OR DRUPACEÆ.

GENERAL PROPERTIES.—The plants of this sub-order (Natural Order *Drupaceæ*, of Lindley) are almost exclusively natives of the cold and temperate regions of the northern hemisphere, and are remarkable for the production of hydrocyanic acid from many of their parts when moistened with water. The barks of several species yield a kind of gum, and possess astringent and febrifugal properties; others furnish edible fruits and seeds.

PRINCIPAL PLANTS AND USES.

AMYGDALUS.—The species *Cochinchinensis* is a native of the woods of Cochin China. The species *Communis* yields the varieties known as sweet and bitter almonds, an article on which will be found in our "Botanical Calendar" for March.* The species *Microphylla*, a native of hot and arid plains in Mexico, also produces a kind of almond. Those much esteemed and delicious fruits, the peach and nectarine, are the produce of varieties of the species *Persica*. The flowers are stated to be gently laxative and to possess vermifugal properties, but their use appears to be attended with some degree of danger, as Dr. Christison mentions the case of a child who died from the effects of taking a decoction of them to destroy worms, and records the death of a gentleman who had partaken of a salad of the flowers. Poisonous properties exist in the flowers, leaves, and bark, owing to the formation of hydrocyanic acid. The kernels may be used for the same purposes as bitter almonds.

CERASUS.—The leaves of the species *Avium*, or Wild Cherry, have been used as a substitute for tea, and a liqueur known in the Vosges and Black Forest under the name of Kirschenwasser, is stated to be prepared from a variety of the same species. The bark of the species *Capollim* possesses astringent and febrifugal properties; that of its root is used in Mexico as a remedy against dysentery. The leaves of the species *Capricida* contain so much hydrocyanic acid as to prove poisonous to cattle that feed upon them, and are stated to prove fatal to the goats of Nipal; they are also astringent and febrifugal. The leaves, bark, and fruit—but especially the leaves and seeds—of the species *Lauro-cerasus*, are poisonous. The poisonous effects are supposed to be owing to a volatile oil containing hydrocyanic acid, produced in a manner analogous to that in the case of the bitter almond. Even when bruised the leaves evolve a vapour which is destructible to insect life, and it is said they are sometimes employed by gardeners for the purpose of killing blight. According to Martius this secretion is greatly increased in Brazil. Cherry laurel water is obtained by distilling the leaves of this plant with water; it is used for similar purposes as hydrocyanic acid, but possesses the disadvantage of varying in strength. The plant is common in our gardens, and is popularly known as the "Laurel," although a member of the genus Cerasus. The species *Lusitanica* is the Portugal Laurel of our shrubberies—another plant misnamed "Laurel." The kernels of the species *Occidentalis*, a native of the West Indies, and others are used for the purpose of flavouring liqueurs, as cherry brandy, maraschino, noyeau, &c. The species *Padus*, or Bird Cherry, possesses similar properties to the Cherry Laurel, but in a less degree. The species *Serotina* is the Black Cherry, and the species *Virginiana*, the Choke Cherry, or Choke Berry. It possesses astringent and febrifugal properties, and is said to be one of the fruits commonly mixed with Pemmican; the bark is prescribed in the United States. Notwithstanding the poisonous nature of this genus, the fruits of many of the species are great favourites, though liable to cause derangement of the bowels when indulged in too freely. Many of the species produce a gum resembling Gum Tragacanth.

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* Page 129.

Prunus.—The fruit of the species *Armenica* is the well-known apricot. The kernels of the species *Brigantiaca* are said to yield a fixed oil, which is termed "Huile des Marmottes," and employed as a substitute for almond or olive oil. The bark of the species *Coccomilia* possesses febrifugal properties, which are highly spoken of. According to Tenore it is a specific for the cure of the dangerous intermittent fevers of Calabria, where it grows. The fruits of species *Domestica* and its varieties are well known as plums, greengages, and damsons. The quantity of sugar they contain is so abundant, that they have been proposed as a source of that article, and when fermented brandy is distilled from them. Prunes are the dried fruits of varieties of this species. In France they are stated to be chiefly prepared for the table from the varieties *Catharina* and *Claudiana*, the St. Catherine and Greengage plum, and in Portugal from a sort which derives its name from the village of Guimaraens, where they are principally dried. Medicinal prunes are stated by Pereira to be the dried fruits of the var. *Juliana*. The leaves of the species *Spinosa*, Common Sloe, have been employed as a substitute for tea, and for the purpose of adulterating it, a mixture consisting of one-third of these leaves with two-thirds of those of the Fragaria Collina or F. vesca is said to form a good substitute for China tea. The bark of this species has been stated to resemble that of Jesuit's bark in its effects. The species *Institia* is the Bullace Tree.

(*To be continued.*)

HYDRASTIS CANADENSIS.

Synonyms —Golden Seal, Orange Root, Yellow Root, Ground Raspberry, Turmeric Root, Yellow Puccoon.*

History.—Very little is known of the early history of this plant. It was introduced into England by Dr. Pattison, as a specific in cancerous disease, and in the first and second stages of phthisis pulmonalis, in all inflammations of mucous membranes, and in some others of these troublesome complaints that have long baffled the profession. Dr. Lee says the root has been used from time immemorial by the Indians as a dye, as well as for medicinal purposes. It dyes silk, wool, and linen a brilliant yellow colour, which is said to be permanent. One species only is known, and that is peculiar to North America.

Botany.—Dr. Lee describes it as a low perennial herb, sending up in early spring, from a thick and yellow knotted rootstock, a single radical leaf, and a simple hairy stem, which is two-leaved near the summit, and terminated by a greenish white flower. It abounds in rich woods throughout most of the United States. The fruit is a berry of a red colour, resembling the raspberry. The flowers appear in April and May, and are short lived, the petals falling off as soon as they expand. It belongs to the natural order *Ranunculaceæ*, The Crowfoot Tribe.

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* This must not be confounded with the Sanguinaria Canadensis, Puccoon, or Bloodroot, which is a member of the family *Papaveraceæ*.

Chemistry.—Its chief or active principle is termed *Hydrastina*, a substance of a bright yellow colour, much resembling iodide, or chromate of lead. It is crystalline; entirely soluble in alcohol, water, and alkaline solutions, but insoluble in ether. It has little smell, but possesses a nauseous bitter taste. Its beautiful yellow colour is a sufficient characteristic to distinguish it easily from the various extracts of Hydrastis.

Medicinal Properties.—The root has a strong somewhat narcotic odour, and very bitter taste; and its powder, which is of a yellow colour, is employed by the faculty. It is stated by some medical men that it completely controls pain; others mention the improved appearance of the sores, or softening of the tumours; and others again speak of its remarkable effects in promoting the general health, and the waxy, anxious expression of countenance, so peculiar to phthisis, being replaced by that of health. Mr. Rankivell has used it successfully in his practice, in the complete absorption of a mammary tumour. The alkaloid Hydrostina has been employed by Dr. Stephenson, of America, in the form of an ointment, and attended with favourable results in catarrhal ophthalmia, and also in many cases of chronic inflammation of the conjunctive. It has been used in dyspepsia, chronic affections of the nervous coats of the stomach, erysipelas, remittent, intermittent, and typhoid fevers, torpor of the liver, and where tonics are required.

Preparations and Doses.—The following are mentioned by Tilden & Co.; the proper doses are appended:—Fluid extract, ʒss. to ʒij.; solid extract, grs. ij. to grs. v.; hydrastin (resinoid), gr. ss. to grs. v.; hydrastin (neutral), gr. ij. to grs. vj.; hydrastina (alkaloid), gr. i. to v. They also give formulas for tinctures, compound infusion, compound powders, and a lotion.

TOUCHING THE AQUARIUM.

I.—Its History and Principles.

Gilbert White, of Selborne, in one of his charming epistles to a brother naturalist, gives a minute account of the *aquaria* which were fashionable in his time—some eighty years ago. "When I happen to visit a family where gold and silver fishes are kept in a glass bowl," writes the philosophical old bachelor, "I am always pleased with the occurrence; because it offers me an opportunity of observing the actions and propensities of those beings with whom we can be little acquainted in their natural state. Not long since I spent a fortnight at the house of a friend, where there was such a *vivary*, to which I paid no small attention, taking every occasion to remark what passed within its narrow limits." He then proceeds to describe how the resplendent little creatures sicken and die; how they deport themselves when surprised; and how greedily they devour small crumbs of bread and the water plant called *Lemna* (duck's meat). "Nothing can be more amusing," he adds, "than a glass bowl containing such fishes: the double refractions of the glass and water represent them, when moving, in a shifting and changeable variety of dimensions, shades, and colours, while the two mediums, assisted by the concavo-convex shape of the vessel, magnify and distort them vastly; not to mention that the introduction of another element and its inhabitants into our parlours engages the fancy in a very agreeable manner."*

Had Gilbert White possessed such a parlour vivary himself, I cannot help thinking that he would have discovered its imperfections, and have found some means to remedy them. The fact of his having noticed that the fishes prefer duck's meat to the jejune diet composed of the animalcules contained in the water, shows that he made some progress towards the truth in the space of a fortnight, and that he had taken the first important step in the right direction by bringing the animal and vegetable kingdoms in juxtaposition. With the bowl of fish constantly at his elbow, he might have been led to further experiments, and have discovered the importance of the water weed *Lemna* in the economy of the little aquatic world. It is, perhaps, scarcely worth while to discuss what the acute Mr. White might have done. He certainly did *not* discover the aquarium, and I merely allude to him as one of the many who reached the very threshold of the discovery without passing it.

It is not easy to trace the history of this interesting discovery, though to Mr. Robert Warington must be awarded the thanks of all lovers of nature for having first produced a perfect aquarium. In 1850, this gentleman communicated to the Chemical Society the results of a year's experiments, "On the Adjustment of the Relations between the Animal and Vegetable Kingdoms, by which the Vital Functions of both are permanently maintained." To illustrate this adjustment, Mr. Warington kept for many months, in a vase of unchanged water, two small gold fish and a plant of *Valisneria spiralis;* and afterwards he made a similar experiment with sea water, weeds, and anemones, which was equally successful. Before this several attempts had been made to preserve fresh-water and marine organisms by naturalists. Mr. Ward, whose ingenious discovery of the method of growing ferns and other delicate plants in closed cases, had already earned for him a world-wide reputation, stated as early as June, 1849, at a meeting of the British Association at Oxford, that he had succeeded not only in growing sea-weeds in sea water, but in sea water artificially made. Seven years earlier, Dr. Johnston, in the course of some experiments undertaken for the purpose of proving the vegetable nature of the common pink coralline, succeeded in keeping this delicate plant for eight weeks in unchanged sea water without any putrefaction ensuing. The list of workers in the aquarium cause is not yet exhausted. Dr. Lankester tells us of a lady in London (Mrs. Thynne) who frequently surprised the scientific societies by exhibiting beautiful specimens of rare marine animals, which she had kept for many months, having merely adopted the simple expedient of aërating the sea water by pouring it from one vessel to another. Dr. Lankester himself, previously to 1850, made the experiment of keeping sticklebacks, gold fish, and other fresh-water animals in jars containing growing sprigs of *Valisneria.* Mr. Gosse, the well-known marine zoologist, also laboured in the same field, and his efforts to domesticate his favourite anemones were tolerably successful. The fact of his being ignorant of Mr. Warington's experiments proves that science had already smoothed the way to the discovery of that beautiful contrivance now universally known as the aquarium; by the aid of which the naturalist, sitting in his parlour or conservatory, may study the natural habits of the strange and beautiful inhabitants of the deep. In the shop of the prudent and scientific pharmacist the aquarium finds a place, not merely because it is an attractive object, but because it forms the most salubrious home for leeches. The dark prison-house furnished with wet moss cannot be a pleasant or healthy dwelling-place for these useful creatures.

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* Natural History of Selborne, letter xcviii.

The scientific principles involved in the aquarium ought to be thoroughly understood before any attempt should be made to employ it for the more healthy and economical keeping of leeches. Fortunately these principles are so beautifully simple, that they can be mastered without much trouble by the veriest tyro in chemistry. I will explain the theory of the aquarium in as simple language as possible. A couple of easy experiments will facilitate matters considerably. Take a large glass vessel—a quart decanter for instance—and, having filled it with clear water, put into it a few sprigs of fresh mint, or, what is better, a water weed gathered from the nearest ditch. Now invert it in a basin of water, taking care that no bubbles of air find entry, to guard against which it will be best to place the stopper in the decanter beforehand, and let it remain there until the neck is covered by the water in the basin. Some handy makeshift must now be resorted to to retain the decanter in its inverted position: I would suggest a couple of bricks or lumps of stone to non-inventive experimentalists. Having thus prepared your apparatus, carry it to a window where it may get the full blaze of the noonday sun; leave it in this situation for a few hours, and then inspect it carefully. If proper precautions have been taken, you will find that the leaves of the plant contained in your decanter are now beaded with a multitude of minute bubbles, which bubbles consist of pure oxygen gas. If you are at all skilled in pneumatic manipulation, you may wait till these little beads coalesce to form one large bubble at the top of your receiver, which you may then transfer to a small tube, and prove to be oxygen by the brilliant combustion of a splinter of ignited wood immersed in it. If you have had no experience in the handling of gases, you had better rest satisfied with the truth of this assertion.

Fill the decanter once more, and instead of the plant put into it half a dozen sticklebacks or tadpoles, and invert it in a basin as before. The rays of the sun fail to call forth little bubbles upon the bodies of the captive fish. After some time these unfortunates begin to pant for breath, their heads sink lower and lower, and unless you release them from their crystal prison, and give them plenty of room and air, they will surely die of suffocation or drowning.

"What is one man's meat is another man's poison," says the proverb, and we see its application in the case before us. The element oxygen, which the plants refuse to absorb into their tissues, is the first necessary of life to the fishes, while the carbon thrown out by the fishes forms the sole food of the plants. Water has the power of absorbing certain quantities of atmospheric air and other gases: the presence of air gives to spring and river water its refreshing qualities, as may be proved by expelling the air by boiling, and then tasting the insipid liquid that remains. Carbonic acid gas gives to soda-water its briskness, while sulphuretted hydrogen imparts the fetid odour and disgusting taste of rotten eggs to whatever water it comes in contact with. Ordinary potable water invariably contains a certain amount of atmospheric air, and also a trace of carbonic acid. This latter gas is a compound formed of oxygen and carbon in the proportions of 16 to 6. The leaves of plants, when acted upon by light, decompose this gas, and, having no necessity for oxygen, they merely absorb the carbon. Animals, on the other hand, require oxygen for the purpose of removing the waste carbon on their bodies, and the process of respiration causes the two elements to combine in the form of carbonic acid.

The vegetable world is, therefore, continually absorbing carbon, while the animal world is giving it off, and a balance is thus preserved between the two great divisions of organised beings. Two more elements play an important part in the phenomena of life, namely, nitrogen and hydrogen. Both plants and animals require them as food. These two gases combine to form ammonia, which is found in small portions in the atmosphere and in water. Plants obtain a supply of it in the water absorbed by their rootlets, and animals in the substances they devour. All the various forms of animal and vegetable life are built up of these four elements, and accordingly it is with these elements that we have to deal in our aquarium. A vessel containing a supply of plants and animals must be looked upon as a little world, in which the interchange of elements represents those vast phenomena that preserve the balance of life in the great world; the few water weeds take the place of the huge forests, the green prairies, and the dense jungles; and the gold fish, minnows, and newts stand for the earth's fauna. To form an aquarium you have merely to imitate nature; a good supply of plants must be planted in your little world to decompose the poisonous carbonic acid, and to keep up a continuous supply of the vivifying oxygen; and you must particularly guard against converting your tank into a miniature Grotto del Cano, by overcrowding it with animal life.

In another paper I will explain how the aquarium is to be stocked, and kept in proper working order.

B.

CHEMICAL NOTES.

Carbonic Acid, Ammonia, and Nitric Acid, in the Atmosphere: new and delicate tests for ammonia and nitric acid.—The quantity of carbonic acid in the air varies, according to the experiments of Saussure, from 3·15 to 5·75 volumes in 10,000; the mean being 4·15. It is more abundant during the night than during the day, the mean quantity in the former case being 4·32, and in the latter 3·38. It is diminished, as might be expected, by heavy rains, which dissolve and carry it down into the soil, but it is increased during continued frosts, which retain the atmosphere and the soil in a dry state. It is greater over cultivated lands than over water, at the tops of mountains than at the level of the sea, in towns than in the country. The quantity of carbonic acid in the atmosphere may at first sight seem too trifling to be of any practical importance, but if we adopt the estimate of Marchand, that the total weight of the atmosphere amounts to 5,120,000,000,000,000 tons, and calculate the mean quantity of carbonic acid at 4·15 volumes in 10,000, we shall find that it amounts to no less than 2,400,000,000,000 tons, which is amply sufficient to afford an abundant supply of carbon to the whole vegetation of our globe. The same may be said of ammonia, which can always be detected in rain and snow water. According to the experiments of Barral, made on the water collected in the rain-gauges of the Paris Observatory, the ammonia annually deposited on an acre of land amounts to 12·28 lbs., a quantity considerably exceeding that obtained by Way, whose experiments were made at a distance from towns; his estimate is under 10 lbs., which is probably much nearer the truth. If, however, we assume the whole atmosphere to contain not more than one part in fifty millions, it will amount to the enormous quantity of 74,000,000 tons. The presence of ammonia in rain water may be readily made evident in the following manner :—To a solution of corrosive sublimate add solution of iodide of potassium, until the bright scarlet precipitate, which first forms, is completely re-dissolved, and a clear colourless liquid obtained; add to the solution about half its volume of caustic potash, and a mixture is obtained, the delicacy of which, as a test for ammonia, is almost beyond belief. One single drop of a solution of any ammoniacal salt in a quart of water is detected by the production of a cloudiness, which after an hour settles into a decided yellow precipitate; the experiments should be made at the same time on a similar quantity of pure distilled water, and the results compared. Ammonia may always be detected in Thames water by this test.

Nitric Acid has been found in rain water, dew, and fog, and Way estimates the quantity annually conveyed to the soil at about 3 lbs. per acre. We have recently been put in possession of a test for this acid, which vies in delicacy with that above described for ammonia. It is as follows :—Put into a small white Berlin capsule a fragment of pure *sulphate of manganese,* about the size of a pin's head, pour over it a few drops of *phosphoric acid,* and evaporate carefully to dryness, the residue is white, but if the most minute quantity of nitric acid be present it reveals itself by the production of a pink or crimson colour. One drop of solution of nitrate of potash in a quart of distilled water may in this way be detected.

New Green Colours.—The following colours, free from the objections which apply to the arsenical greens, are described by Elsner :—

1°. Elsner Green.—This is prepared by adding to a solution of sulphate of copper a decoction of fustic, previously clarified by a solution of gelatine ; to this mixture is then added 10 to 11 per cent. of protochloride of tin, and, lastly, an excess of caustic potash or soda ; the precipitate is then washed and dried, whereupon it assumes a green colour, with a tint of blue.

2°. Tin Copper Green.—This is made by heating 59 parts of tin in a Hessian crucible with 100 parts of nitrate of soda, and dissolving the mass when cold in caustic alkali; when clear this solution is diluted with water, and a cold solution of sulphate of copper added, a reddish yellow precipitate falls, which, on being washed and dried, becomes a beautiful green.

3°. Titanium Green.—Titaniferous iron is fused in a Hessian crucible, with 12 times its weight of sulphate of potash; when cold the fused mass is treated with hydrochloric acid, heated to 50° cent., and filtered hot, the filtrate is then evaporated until a drop placed on a glass plate solidifies; it is then allowed to cool, and when cold a concentrated solution of sal-ammoniac is poured over the mass, which is well stirred and then filtered. The titanic acid which remains behind is digested at 50° or 60° cent. with dilute hydrochloric acid, and the acid solution, after the addition of some solution of prussiate of potash, is quickly heated to boiling; a green precipitate falls, which must be washed with water acidulated with hydrochloric acid, and then dried under 100° cent.; it forms a beautiful dark green powder.

Liquid Diffusion applied to Analysis.—Professor Graham, whose labours in connection with the phenomena of diffusion are so highly appreciated by chemists, has lately read before the Royal Society a memoir, in which he shows that the unequal diffusibility of different substances in water, may prove a means of separation not unlike those long derived from unequal volatility; for as regards diffusion there exists a "volatile" and also a "fixed" class of substances; and this distinction appears to correspond with differences in molecular constitution of a fundamental nature. Viewed with reference to diffusion, chemical substances are divisible into two great classes: the first or the *diffusive* class is marked by the tendency of its members to crystallize either alone or in combination with water; when in a state of solution they are held by the solvent with a certain force, so as to affect the volatility of water by their pressure. The solution is generally free from viscosity, and is always sapid. Their re-actions are energetic and quickly affected. This is the class of *crystalloids.*

The *second* class comprehends substances of low diffusibility, and are termed *colloids,* as they appear to be typified by animal gelatine; they have little if any tendency to crystallize, and they affect a vitreous structure; they are held in solution by a feeble power, and have little effect on the volatility of the solvent; they are precipitated from their solution by the addition of crystalloids; their solutions have a certain degree of gumminess; they are insipid; their solid hydrates are gelatinous bodies. In their chemical re-actions the *crystalloidal* appears the energetic form, and the *colloidal* the inert form of matter. Among the colloids rank the following: hydrated silicic acid, and a number of soluble hydrated metallic peroxides, of which little has hitherto been known; starch, gums, dextrin, caramel, tannin, albumen, and vegetable and animal extractive matters. The peculiar structure and chemical indifference of the colloids appear to adapt them for the animal organization, of which they become the plastic element. Although the two classes are widely separated in their properties, a complete parallelism appears to hold between them; their existence in nature appears to call for a corresponding division of chemistry into a crystalloid and a colloid department. The colloidal is a *dynamical* state of matter, mutability being an eminently characteristic quality of colloids; the rigidity of the crystalline structure on the other hand shut out external impressions, and so the crystalloidal may be considered as the *statical* condition of matter. The colloid possesses *energia*; it may be looked upon as the probable primary source of the force appearing in the phenomena of vitality, as living matter without form. To the gradual manner also in which colloidal changes take place, may the chronic nature and periodicity of vital phenomena be ultimately referred.

For the separation of unequally diffusive crystalloids from each other, Professor Graham conveys the mixed solution by means of a pipette to the bottom of a column of water contained in a glass jar. A kind of *cohobation* takes place; a portion of the most diffusive substance rising and separating from the less diffusive substances more and more completely as it ascends. To separate a crystalloid from a colloid—as, for example, sugar from gum—the mixed solution is placed in a sort of sieve formed by stretching De la Rue's parchment paper across a flat hoop formed of sheet gutta percha: this sieve is set floating upon a considerable volume of water in a basin; three-fourths of the sugar diffuse out in twenty-four hours, and so free from gum as to be scarcely affected by subacetate of lead, and to crystallize on the evaporation of the external water by the heat of a water-bath. The action appears to be this:—The crystalloid sugar takes water from the hydrated colloidal septum (the parchment paper), and thus obtains a medium for diffusion; but the colloid gum has no power to separate the combined water of the same septum, and does not, therefore, open the door for its escape by diffusion as the sugar does. This separating action of the colloidal septum is called *Dialysis*.

The following experiments are described by Professor Graham in illustration of the probable future value of this new mode of analysis, or rather of *dialysis*:—A solution of silicate of soda in water acidulated with hydrochloric acid, being placed in the parchment paper *dialyser*, and allowed to diffuse into water, the latter being occasionally changed; after the lapse of five days seven-eighths of the original silicic acid was found to remain liquid upon the septum, and so free from hydrochloric acid and chloride of sodium as not to give a precipitate with acid nitrate of silver.

The true hydrated alumina, and also Mr. Crum's metalumina, were obtained soluble by dialyzing solutions of these oxides in the chloride and acetate of the same metal. So also the hydrated peroxide of iron, in addition to the hydrated metaperoxide of iron of M. Péan de Saint Gilles, and the soluble hydrated chromic oxide. The varieties of Prussian blue were obtained soluble by dialyzing their solution in oxalate of ammonia, the latter salt diffusing away. Stannic and titanic acids appear as insoluble gelatinous hydrates. A solution of gum arabic (gummate of lime) dialyzed after the addition of hydrochloric acid, gave the pure gummic acid of Fremy; and soluble albumen was obtained in a state of purity by dialyzing that substance with an addition of acetic acid.

But the most valuable application of dialysis will probably be to the separation of arsenious acid and other metallic poisons from organic fluids. Graham charged defibrinated blood, milk, and other organic fluids with a few milligrammes of arsenious acid and placed them upon the dialyzer: the greater part of the arsenious acid was imparted to the external water in the course of twenty-four hours; the *diffusate* being so free from organic matter, that the metal could be readily precipitated by sulphuretted hydrogen, and the quantity weighed. We anticipate great results from the following up of the new method of research which has been thus so ably opened by Professor Graham.

HENRY M. NOAD.

REVIEWS

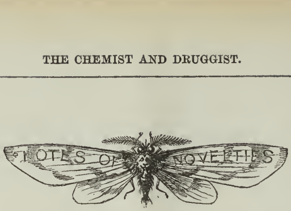
The Druggist's Receipt Book. By Henry Beasley. Fifth Edition. London: John Churchill. 6*s.*

In the chemist's library of reference this valuable little work generally finds a place; and we have no doubt that nine-tenths of our readers have derived useful information from its pages. If, therefore, we describe its multifarious contents we shall be telling a story which most of our subscribers have got by heart. However, as a fifth edition of *Beasley* has just been published, we take the opportunity of introducing this "guide, philosopher, and friend" to those who are just entering the profession. There are more than two thousand recipes, all likely to prove useful to the pharmacist, in this book; and they are grouped into separate classes so as to facilitate reference. Under the head of "Veterinary Materia Medica," we find a very complete list of the medicinal substances used in veterinary practice, with notes on their properties and doses. This list is followed by a copious "Veterinary Formulary," filling upwards of a hundred pages. In this portion of the work all the most important medicines for horses, neat-cattle, sheep, swine, and dogs are described. The next division of the work is headed "Patent and Proprietary Medicines. Druggists' Nostrums, &c.;" and includes such medicinal preparations as belong to empirical rather than to regular practice. Here we find formulæ for secret and patent remedies, and for favourite domestic remedies. Some twenty pages relating to "Perfumery" follow, which are well worth the attention of the pharmacist. Then comes the section comprising receipts for "Cosmetics"—those articles which too often give temporary beauty and destroy the health at the same time. In the next section, "Beverages, Dietetic Articles, and Condiments," are spoken of, and the proper modes of preparing and using them described. Under this head the various preparations of cod-liver oil are given. The next division is a very important one, and it extends over some two hundred and fifty pages. It is distinguished by the comprehensive title of "Trade Chemicals;" and it includes miscellaneous Preparations, Processes, and Compounds used in the Arts, in Domestic Economy, Chemical Research, and Recreation. An Appendix consisting of several useful tables follows; and a capital index concludes this wonderful magazine of "things in general." We may mention that, to the fifth edition, some important additions have been made so as to bring the work up to the present state of science.

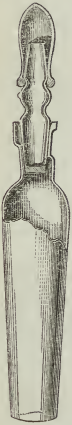
PUBLICATIONS RECEIVED.

The Druggist's Receipt Book, by H. Beasley (Churchill).—A List of Photographic Apparatus and Materials, by Thomas Greenish. [This is something more than a mere list, as it gives much valuable information on photographic manipulation; it is supplied gratis. The address of the author is 20, New-street, Dorset-square, London.]—Illustrated Catalogues of Paraffin and other Lamps, from Hinks, of Birmingham, Defries & Sons, and Dashwood & Symmons, London. [Nearly all the multiform varieties of lamps used for burning the mineral oils are artistically figured in these lists. As some of our country subscribers are interested in the paraffin lamp trade, we deem it advisable to notice these new publications here.]

Periodicals.—Pharmaceutical Journal.—Technologist.—Geologist.—Dublin Hospital Gazette.—Practical Mechanic's Journal.—Civil Engineer.—Journal of the Society of Arts.—American Journal of Science and Art (New Haven).—American Journal of Pharmacy.—Medical and Surgical Reporter.—Dental Cosmos (Philadelphia).—Eclectic Medical Journal.—Boston Medical and Surgical Journal.—Tilden's Journal of Materia Medica (New Lebanon).—Maryland and Virginia Medical Journal (Baltimore).—Savannah Journal of Medicine.—Keith's Journal of Indigenous Materia Medica (New York) —Scientific American.—American Medical Times.—American Agriculturist.—Drug Reporter (New York).—The Druggist (Cincinnati).



PATENT AIR-TIGHT FEEDING BOTTLE.



This novelty has been introduced by the York Glass Company. The milk flows out of the bottle through a hollow stopper, in the side of which a hole is drilled, and the air enters by a groove cut on the other side. The connection between the hole in the stopper and the contents of the bottle, and that between the groove and the external air, is in each case effected by a hollow, which forms a bulge on the side of the neck. The mode of using this ingenious contrivance is extremely simple :—

Replenish the bottle with milk, and introduce the stopper, taking care that the small button, or projection upon the side of it, may be in a line with the upper groove on the bottle neck. The milk will then flow in exact proportion to the degree of suction applied. When not in use, turn the stopper half round, and the bottle will be air tight.

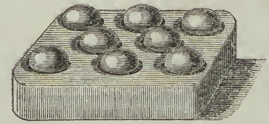
The sectional diagram shows the milk and air passages open.

This patent feeding bottle being made entirely of glass, is free from the objections which are common to all which are mounted with cork, bone, ivory, or india rubber—those substances being liable to absorb, and therefore to retain small portions of milk, which, fermenting quickly, are ready to spoil the fresh contents of the bottle.

McFURLEY'S PATENT TASTELESS PILLS.

Some colocynth pills rendered tasteless by a process patented by Mr. McFurley, of Edinburgh, are now before us. Pills, though they are the easiest form in which medicine can be taken, are very repulsive to some persons, particularly if they contain very bitter or nauseous substances. To conceal their nauseous taste many ways have been devised, such as coating them with gold-leaf, gelatine, or sugar. The more perfect the coating, however, the more liable the pills to pass through the stomach without being dissolved. The delicate film which Mr. McFurley puts on his pills seems to be free from the defects of other coatings. It is absolutely tasteless, it does not alter the ordinary appearance of pills, and it is perfectly soluble in the fluids of the stomach.

BARGE'S SHAMPOOING BRUSH.



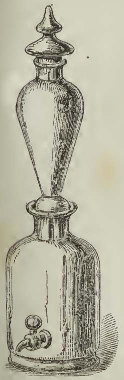
This brush is composed of a number of spheres, which revolve in recesses in a hand-piece of wood ; and when pressed firmly, and rubbed over the body and extremities, produces all the effects of hand shampooing. One who has given this curious contrivance a fair trial, thus describes the beneficial effects which result from its use :—

" The nervous, vascular, muscular, and organic systems are stimulated in a manner really wonderful. Torpor of the liver and bowel yields at once to its use, and the complexion, which before had been pale, leaden, and sallow from these causes, assumes a healthy bloom ; the mind is relieved as of a burden, grief and apprehension give way to joy and satisfaction ; anxiety, which had marred the happiness of every undertaking however prosperous, no longer holds its sway, but hope and confidence enhance the pleasure of every engagement. There is a charm in the action of this brush which so alters the strength and constitution of everybody, that obesity on the one hand, and emaciation on the other, gradually but certainly change into the happy medium of plumpness and solidity enjoyed by the fairly proportioned individual, whilst disease, with all its concomitant suffering and annoyance, is held powerfully at bay. Strange too it is, that while the application of this brush is so great a boon to the sedentary, it is equally so to the man of active life. It refreshes him after his long day's hunting or shooting, and like magic, takes off the stiffness which always follows or attends over-exertion. Thus to the volunteer, by relieving his weariness and fatigue, and strengthening his muscles, this brush is invaluable."

As we have not tested this brush, we cannot say whether the above glowing description of its effects is correct in all points, but we must say that the contrivance is very ingenious.

NEW DISPLACEMENT APPARATUS.

The process of percolation, or displacement, is acknowledged to be the neatest, most rapid, and by far the most productive method for extracting the soluble principles from vegetable substances. At the present time it is extensively employed in the preparation of concentrated tinctures and solutions; and, in the practice of many enlightened pharmacists, it has almost entirely superseded the process of maceration. The French coffee-pot containing two perforated diaphragms, between which the ground coffee is placed, is the oldest form of displacement apparatus. This had long been celebrated for the production of a clear and strong infusion, possessing a finer aroma than that made by the common plan of decoction; but, until the year 1833, the idea of using a similar apparatus for the production of pharmaceutical preparations does not seem to have occurred to any one. This application is due to the celebrated French *pharmaciens*, Boullay and Son, who, by their admirable and well-conducted experiments, demonstrated the adaptability of percolation to the general purposes of the shop and laboratory, and pointed out the best forms of apparatus, and the best modes of using them. Excluding the extemporaneous or make-shift percolators formed of common funnels and lamp-chimneys, the displacement apparatus which is generally used by practical pharmacists, consists of two glass vessels fitted together; the lower vessel, or receiver, is furnished with two openings, one at the top, into which fits the funnel neck of the upper vessel, or percolator, and the other high up at the side. This second opening is for the escape of the displaced air, which passes by a flexible tube into the upper orifice, or mouth of the percolator. This form of displacer is perfectly air-tight, and is therefore well adapted for operating with volatile liquids.



In the new displacement apparatus, manufactured by the York Glass Company, the usual flexible tube, by which the connection between the vessels is maintained, has been dispensed with, and the escape and entrance of air are provided for by an ingenious arrangement of grooves cut in the fitting parts; and for the convenience of drawing off the tincture, a glass tap is fitted into the lower part of the receiver. The new apparatus, being entirely composed of glass, is a much more elegant object than the old one, and we should imagine that it would prove more useful. The groove made in the stopper of the percolator extends a little more than half way down the ground surface; that cut in the upper neck of the percolator extends for about the same length upwards; consequently, when the two grooves are in a line, a small passage for air is left; but when in any other position, the grooves do not in the least degree affect the air-tight character of the stoppering. The grooves cut in the other fitting surfaces are precisely similar to those which we have described. The annexed engraving shows the grooves of the upper juncture in such a position as would effectually prevent any escape of air from the percolator, and those of the lower juncture arranged so as to allow the displaced air to escape from the receiver.

It will be obvious that when each pair of grooves is in a straight line the liquid will percolate freely, as air will pass into the upper vessel and out at the lower one; whereas if the percolater and its stopper are turned round a little, so as to put the grooves out of line, the passage of air will be prevented, and the liquid will necessarily cease to flow. If, therefore, all joints be made air-tight the digestion of the solid substance with the menstruum goes on, but no percolation takes place. The latter action can thus be arrested at pleasure, and may be started again at any moment by merely turning the vessels so as to bring the grooves in line. In the old apparatus, provided with the tube, there could be no waste by the escape of volatile liquids, while in the new one there must be a slight loss of vapour, though it be only the amount contained in the air expelled from the receiver. On the other hand, in the old form there was no provision for expansion or contraction, while in the new one either may take place, without injuring the apparatus or the ingredients which are being operated upon.

THE APOTHECARIES' COMPANY.*

The Company of Apothecaries cannot boast of longer standing than the commencement of the seventeenth century, but yet it is one of the most important of our City guilds, and at the same time one of the blessings which time has conferred upon the poor. To obtain pure medicine, and cheapness with it too, cannot be too highly appreciated by the many. Such is the principle which is now adopted at Apothecaries' Hall. Malcolm alluding to the Company, says that "the lives of the public are in a great measure in their keeping. A mistake committed by an apothecary has been known by fatal experience to be irrecoverable."

Fosbroke, in his *Encyclopædia of Antiquities*, tells us that "among the Greeks and Romans, though the physicians also were collectors and dealers in herbs and medicines, yet the 'apothecarii' were confectioners. 'Apotheca,' among the classical ancients, was a cabinet cellar, or store-room, where were kept oil, wine, &c. In the middle ages too, we find 'apothecæ vini barberiæ,' &c. (wine and barber's shops); 'apothecarii' (shopkeepers); and 'apothecarii' in one sense, drugs." *Vincent's Haydn's Dictionary of Dates* (1857), states that the King's apothecary is first mentioned in the reign of Edward III. (1344), "when he settled a pension of threepence per diem for life on Coursus de Gangeland, for taking care of him during his illness in Scotland."

The trade in herbs was one of the notable trades of bygone times, and in the City itself great dealings were carried on in the Grass Market, now occupied by "Grace"-church-street, and in Bucklersbury, near the great market of the City, now Cheapside. Of Bucklersbury, Pennant states, that in the reign of Queen Elizabeth, it "was inhabited by chemists, druggists, and apothecaries," while Stow corroborates this as being so in his time. Immortal Shakspeare too, in his *Merry Wives of Windsor*, act iii., scene 3, makes Falstaff raise a comparison of smelling

> "Like Bucklersbury in simple time."

Moufet, who wrote in Elizabeth's reign, adds, that in consequence of this thoroughfare being so sweetly perfumed with herbs, &c., it escaped the ravages of the plague. So great were the evils at this period attending the sale of herbs and drugs, that in the 5th of Elizabeth, March 26, the Legislature passed a bill, which set forth that "Apothecaries and their 'stuff' shall be under the search of the College of Physicians."

The Apothecaries were first incorporated with the Company of Grocers in the year 1606; "But," says Chamberlain, "such a connexion not answering the purposes of their incorporation, they were separated by another charter, granted by King James I., in the year 1617," by the style of "The Master, Wardens, and Society of the Art and Mystery of Apothecaries of the City of London." This Act was carried out, through the advice of his physicians, Gideon de Laune, Mayerne, and Akins; and it was enacted that no grocers or others should retail any medicines without the Company's consent within the City, or seven miles thereof, as also full permission to the Company for seizing all unlicensed drugs. At this period there were but 104 apothecaries' shops in and around London—a sure sign of the restriction of the trade.

By statutes 6th William III., c. 3, and the 10th Anne (1712), "Apothecaries of the City of London are exempted from the offices of constables, scavenger, overseers of the poor, and other parish, ward, and leet offices; and of and from serving upon any juries or inquests."—(*Laws and Privileges of London.*)

"Towards the close of the seventeenth century," says Charles Knight, "the apothecaries of London began generally to prescribe, as well as dispense medicines. The College (of Physicians) resisted this inroad on their domain; and established, by way of retaliation, it is said, a dispensary at their hall for the sale of medicines at prime cost." A civil war at once commenced, which Garth took up, and the two buildings rendered notable in the *Dispensary*, thus:—

The College of Physicians—

> "There stands a dome majestic to the sight,
> And sumptuous arches bear its awful height;
> A golden globe, placed high with artful skill,
> Seems to the distant sight 'a gilded pill.'"

Apothecaries' Hall—

> "Nigh where Fleet ditch descends in sable streams,
> To wash his sootty Naiads in the Thames,
> There stands a structure on a rising hill,
> Where tyros takes their freedom out to kill."

In 1736, the *Gentleman's Magazine* notes that several apothecaries and chemists were convicted in a penalty of 100*l.* each for retailing spurious drugs. In 1737, a writer says that Manchester was too full of surgeons, "considering how the apothecaries quack under our noses." Ten years afterwards, application was made by the Company for increase of power, as there were then 700 shops in and around the City, half of which were kept by persons not free of the Company, and who carried on a trade of vending spurious drugs. "The profits of an apothecary," says Campbell, in his *London Tradesman*, "are inconceivable; 500 per cent. is the least he receives. The greatest part of his outlay is in phials, small boxes, and cut paper; and these are often worth ten times what they contain." A Court of Common Council, held December 12, 1758, permitted the apothecaries to employ foreigners as journeymen, to the end of the war and twelve months after.

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* Reprinted from the *City Press.*

The apothecaries anciently went a "simpling" two or three times a-year, and "this laudable custom," says Malcom, "I am informed is still continued." Sir Hans Sloane granted the freehold of the Physic-garden at Chelsea, to the Company, January, 1753, on condition that they present the Royal Society annually with fifty new plants when the number should amount to 2,000.

Apothecaries' Hall, in Water-lane, opposite Union-street, Bridge-street, Blackfriars, was finished in the year 1670, and, according to Pennant, is "a large and handsome building;" but Malcolm describes it "of brick, without ornament, except a large arch entrance. The quadrangle is stuccoed, and the great room on the east side. It is very plain, with a small gallery at the north end." There are several portraits, including those of James I., Charles I., William and Mary, and a bust of Gideon de Laune, but the whole are poor attempts, and are much faded, the best being that of William Prowting, Esq., Master, 1773.

Vast quantities of medicine are prepared at the hall, and retailed, in a shop adjoining, to the public at large. Mr. Timbs notes, that "on June 4, 1842, Mr. H. Hennell, the principal chemical operator to the Apothecaries' Company, met a terrific death in the laboratory yard, by the explosion of between five and six pounds of fulminating mercury, which he was manufacturing for the East India Company." The medicines for the army and navy are prepared here. The Dublin Guild was incorporated 1745.

The apothecaries' motto is "*Opiferque per orbem dicor*," (I am said to be a help through the world), and they rank the fifty-eighth on the City Companies' list.

The Master for the present year is John Hunter, Esq., Mr. William Buchanan and Mr. Charles W. Wheeler are the Wardens; Mr. R. B. Upton, Clerk.

THE MONTH

New Pharmaceutical Publication.—If the rumours afloat on the subject are to be credited, the abolition of the paper duty will be followed by the entreé of a new aspirant to the suffrages of the pharmaceutical public.

United Society of Chemists and Druggists.—We understand that Mr. Buott, senior, is vigorously pushing the cause of this Society through the country trade, and are glad to hear that his earnest advocacy is likely to be attended with a large accession of new members.

The Right to Prescribe.—We extract the following from our contemporary, the *Lancet*:—"Is it legal for a druggist to prescribe for a patient who presents himself for advice at the shop counter? This question has been answered in the negative by the Judge of the Exeter District County Court. We believe there can be no doubt that Mr. Tyrrell's law is correct. An apothecary has been defined by the Judges to be "a person who attends, prescribes, and dispenses medicine for gain in a medical case." Counter practice, then, by an unqualified person is clearly an infringement of the law. If he cannot recover for medicine so supplied, he is liable to prosecution under the Apothecaries' Act. The evils resulting from the practice of medicine by mere drug-sellers are incalculable; they far exceed all those resulting from quack nostrums, or from the practice of homœopaths or other pretenders to a knowledge of medicine. Well would it be for society if the counter-practice of druggists could be put an end to. Thousands of lives would be saved annually, and curable diseases taken out of the hands of those who make them incurable and hopeless. This is a subject worthy the attention of the National Medical Registration Association—a body which has already conferred immense benefits on the profession and the public."

Poisonings.—At the Clerkenwell police court, Ellen Greenwood, aged 18, was charged with attempting to commit suicide by taking a quantity of laudanum at North-place, St. Pancras. In defence, the prisoner said she would not have done it had she not been the worse for liquor. Promising not again to attempt to destroy her life, she was discharged.—At the same court, Ann Herring, aged 16, a respectable-looking young girl, residing at Greenwich, was charged with attempting to destroy herself by taking a quantity of white precipitate powder in the Gray's-inn-road. The prisoner was seen by a policeman in a very low state of spirits, sitting on a door-step, and on speaking to her, and ascertaining that she had taken poison, he took her to a surgeon's. Although in a very bad state she ultimately recovered. The prisoner's parents are highly respectable, and had done all they could to keep her at home; but she was very wayward and would not stop with them. Through the exertions of the chaplain at the House of Detention she would now be admitted to a reformatory.—At Worship-street, a woman of 50, named Charlotte Jefferies, was charged with attempting to poison herself. Carey, of the K division, was fetched to the prisoner, whom he found almost senseless from having swallowed a large dose of laudanum. He took her as speedily as possible to the London Hospital, of which she had been an inmate since the 29th ult., and from the resident medical officer he obtained a certificate stating that she might be now considered out of danger. The prisoner stated, in answer to Mr. Leigh, that she was the mother of several children, all incapable of giving her assistance with the exception of one son, who was doing very well in the oil and colour business. Her husband was engaged in harvest work at Maidstone, and, as she was anxious to go to him, she applied at the house of this son to get enough to carry her down; but, instead of helping her, he even refused to see her. This so wounded her feelings that she determined to destroy herself. If the magistrate would now discharge her she would, she said, contrive to join her husband at once, and without assistance. Mr. Leigh did not think it prudent to part with her under such circumstances; he had no security but that she might, in her present frame of mind, repeat the offence as soon as she left the court. Maidstone was at too great a distance for a woman to walk to unhelped, and he should therefore send her to the House of Detention for a week, where she would be well looked after by the surgeon and chaplain. If the inquiries of the police resulted in a confirmation of her distressing tale, he would himself order her enough from the poor-box to carry out her intention.

The following article, extracted from our contemporary, the *Lancet*, which appropriately heads it "Poisoning no Crime," corroborates our own remarks on the same subject in the last number of the *Chemist and Druggist*:—

"Two further cases must be mentioned this week of so-called 'accidental poisoning,' simultaneously revealed. They must be added to the many scores which we have chronicled of late. They are perfectly typical, and exactly indicate the kind of negligence in which such accidents originate. The particulars of the one case reach us from Bideford. A lady, on a visit to Mrs. Willcocks of that place, was suffering from relaxation, and by the advice of her friend sent to Mr. Griffiths, chemist, for three pennyworth of tincture of rhubarb, and three drops of laudanum. She received a draught in return, from the effects of which she very soon died, with all the symptoms of narcotic poisoning. Energetic measures were taken to neutralize the effects of the poison, but the patient died a victim to the negligence of the chemist, who had sent an overdose of laudanum, or, in other words, in the terms of the evidence, appears to have substituted laudanum for tincture of rhubarb. Now, if this mistake were made in this case for the first time, if it were a piece of carelessness never before heard of, it might not call for more than painful regret, and anxious inquiry into means for prevention. But we have lately referred to the very same kind of accident with the identical tinctures of rhubarb and opium as having occurred several times recently. It was the cause of a death at Reading and at Richmond; it was the cause of the death of the Hon. Mrs. Anson; and of the almost fatal illness of Mrs. Peel. Moreover, we have placed forcibly before the medical profession and the dispensing druggists the necessity for storing energetic poisons in the narrow-necked safety bottles introduced by Savory and Moore, and successfully employed in the Army Medical Service and in large dispensing establishments, for this purpose. With this simple, cheap, and easy precaution these accidents would have been impossible. The necessity for using these means does not appear to have been represented to the jury, or we cannot doubt but that they would have appended a rider to their verdict, and they might possibly have changed its general tenor in a manner not satisfactory to Mr. Griffiths. For our own part, we hold that in any case where, for the future, a chemist, having neglected this simple precaution, should by his negligence injure or kill a fellow-creature, he should be convicted of manslaughter, or mulcted in damages according to the degree of injury inflicted.

"In the second case we have a repetition of another phase of 'accidental poisoning,' due to a parallel piece of negligence on the part of the dispensing chemist.

"'Mr. Vaughan, a gentleman occupying a most respectable position in life, who had been living at Dollar for the last eight or nine years, whither he had come for the benefit of his children's education, awoke at an early hour in the morning, and finding himself unwell, he got out of bed for the purpose of taking an emetic. Proceeding to a cupboard where some medicine phials stood, he took down one which he believed to contain antimonial wine, and took a dose from it. He had not long taken it when he became alarmingly ill, and, fearing that he might have made a mistake, he examined and found that, instead of emetic wine, he had taken a poisonous dose of tincture of aconite, or monkshood, which stood in a phial beside the other, and which he had been using as an external application for rheumatism. Having communicated the sad intelligence to his family, medical aid was immediately sent for, but, melancholy to relate, the deadly poison had already taken such effect upon his system, that by the time the doctor had arrived recovery was not to be looked for, and he died ten minutes afterwards.'

"Within the last year we have recorded upwards of twenty fatal accidents, which had occurred of late years under similar circumstances. We have energetically called upon dispensing chemists to adopt the narrow-necked square bottles for all poisons and liniments. The use of this simple precaution, since we urged its general adoption, would by this time have saved many lives. Any chemist who fails to comply, and whose patient dies in consequence of his negligence, is, in our view, guilty of manslaughter; and when the knowledge of the easy precautions, thus culpably omitted, becomes extended to the general public, as we trust it may, he will not escape conviction. Meantime the public and the profession are justified in demanding in every instance that this safeguard should be adopted."

Non-Inflammable Clothing.—Dr. Odling, of Guy's Hospital, in a letter addressed to a contemporary, on the subject of the recent crinoline accidents, gives the following valuable information on the effects of certain salts upon fabrics :—The various means proposed for rendering textile fabrics non-inflammable were carefully investigated a short time back by two well known chemists, Messrs. Versmann and Oppenheim. An account of their experiments was read at the Aberdeen meeting of the British Association in 1859, and was afterwards published in the *Journal of the Society of Arts*, and in a separate form by Trübner and Co., of Paternoster-row. They showed that linen and cotton goods dried after immersion in a solution of one or other of several salts possessing the property of non-inflammability, and that the best results were obtained with a solution of sulphate of ammonia, or of tungstate of soda, neither of which liquids produced any injurious effect upon the tissue or colour of the fabric. The tungstate of soda solution was found most applicable to laundry purposes, on account of its not interfering in any way with the process of ironing. Muslins, &c., steeped in a 7 per cent. solution of sulphate of ammonia, or a 20 per cent. solution of tungstate of soda, and then dried, may be held in the flame of a candle or gas lamp without taking fire. That portion of the stuff in contact with the light becomes charred and destroyed, but it does not inflame, and consequently the burning state does not spread to the rest of the material.

Legal Intelligence.—Taylor *v.* Maggs.—This was an action brought by a veterinary surgeon and dealer in patent horse medicines, residing at Burton-on-Trent, to recover the sum of 1*l.* 13*s.* 6*d.* for goods alleged to have been supplied to the defendant, a pharmaceutical chemist, residing at the Medical Hall in Yeovil. When the case was called on the plaintiff did not appear, but a letter was handed to his Honour, stating that he (the plaintiff) required an adjournment of the case, his principal witnesses being on a journey in Scotland, and enclosing an order for articles alleged to have been ordered by Mr. Maggs. Mr. Sidney Watts, for the defendant, said he held in his hand a letter from plaintiff, stating that his traveller had left him, and now he wished his Honour to believe he was in Scotland. No notice had been given that an adjournment would be applied for, and the defendant's witnesses had come long distances to give evidence on his behalf. He could clearly prove that Mr. Maggs never ordered the articles, the subject of this action, and although plaintiff had written and professed to hold Mr. Maggs' signature to the order, it now transpired he had nothing of the kind, but had simply affixed a printed label, doutless taken from defendant's counter. Mr. Maggs defended this action on principle, and a witness from London was in court, who came expressly to give evidence in this case, and would, with defendant, swear that the order, as produced with Mr. Maggs' label affixed, was a forgery, and the goods were not ordered by defendant. This being the case, Mr. Watts must request his Honour to nonsuit the plaintiff, and give the defendant full costs. Nonsuited accordingly, with costs.

Surgical Instruments in 1862.—The National Surgical Instruments Committee announce that "they are prepared to receive and consider applications for space, and otherwise to co-operate with and facilitate the views of intending exhibitors in all parts of the country. The action of the Committee extends not merely to the advantageous exhibition of the ordinary trade productions comprehended under the head 'Surgical Instruments,' but also of apparatus, appliances, and inventions of every description having relation to the science of medicine, or employed in the investigation and treatment of disease. The Committee trust that, in the interest of the branch of industry they represent, the medical Journals will be good enough to give as extended a publicity to their intentions as possible."

International Exhibition, 1862.—Mr. C. W. Quin, the author of the interesting series of papers on Photographic Chemicals which are in course of publication in this journal, has been appointed Superintendent of Classes II., III., and IV. The numerous articles on Chemistry and Technology which have been produced in his study, prove that one more right man has got in a right place.

The British Pharmacopœia.—From the report of the Secretary of the Pharmacopœia Committee lately read before the General Council of Medical Education, we learn that the three divisions of the Committee have been hard at work since they were last heard of, and that the manuscript of the long looked-for work will very shortly be ready for press. We are told that the labour of compiling the *British Pharmacopœia* has been very great; as every preparation given in the work has been made, often repeatedly, and each process practically examined.

Pharmaceutical Society.—At a meeting of Committee, held on the 26th of July, the subject of the proposed alteration of the bye-laws was discussed, and the following minute adopted :—"The Committee having considered the bye-laws, and the correspondence relating to proposed alterations of the same, think it desirable to have a further expression of opinion on the subject before proceeding with that part of the proposed alteration relating to the admission to membership of chemists in business on their own account prior to 1852, without passing the usual examination, but on the production of certificates satisfactory to the Council." The important subject of Accidental Poisoning has been under consideration, and a Committee have undertaken to inquire into and report upon the best arrangements to be adopted for the protection of the public.

A Fair Exchange.—We have frequently helped ourselves to the good things which Professor Procter provides for the readers of the *American Journal of Pharmacy*, the best publication of its kind in the States. We are glad to see that its scientific editor in return takes what he requires from us. Two long papers from the *Chemist and Druggist*, both by the author who pretends only to *touch* upon certain subjects, besides several short articles, appear in the July number of our American contemporary.

SHALL EXHIBITORS HAVE FREE TICKETS AT THE EXHIBITION OF 1862?

Many of our readers were of the number of those exhibitors at the International Exhibition of 1851, who endeavoured, though unsuccessfully, to obtain what should have been accorded to themselves and all their fellow-exhibitors. Notwithstanding that the Exhibition was proclaimed to have been established for the encouragement and the promotion of the industry of all nations, yet no more "encouragement" was afforded to the industrial or trading community, without whose assistance the Exhibition would have been a failure, than was bestowed on any other section of the community. No exhibitor could be present at the formal opening by Her Majesty without paying the same fee as if he had contributed nothing to the Exhibition; and after that opening if he wished to enter the building to re-arrange, or do aught else to his wares, he had to pay the same fee and as often as that imposed on a non-contributing visitor. The hardship of this was felt at the time, and many exhibitors protested against the arrangement, and, after having held several meetings, they sent a deputation to the Prince Consort. It was all, however, in vain. His Royal Highness received them with his well-known suavity, but said that the Committee having resolved that the exhibitors should pay, their decision could not be revoked. The manufacturers in different parts of the country are now being called together by the Mayor, or other chief public functionary of the towns in which they reside, with a view to the promotion of the objects of the Exhibition of 1862. Now, therefore, is the time for exhibitors to press the suit that they preferred ten years ago. Happily they are able to quote a precedent in their favour. At the Paris Exhibition every exhibitor was presented with a free ticket, by which he was enabled to go in and out of the building at pleasure. Those exhibitors who sent property to the Exhibition in Hyde Park, and who were also exhibitors in Paris, were able fully to appreciate the politeness and the propriety displayed in the course which was pursued by the Commissioners of the Paris Exhibition.

Correspondence

KING COTTON.

[FROM OUR CORRESPONDENT IN PHILADELPHIA.]

What shall a citizen of the United States say to subjects of Her Britannic Majesty, at a time like this when, with a real and universal friendship pervading the two great nations, the governments are passing through a most severe trial of their fealty? For myself, I feel like saying to my English brethren of the pestle and mortar, that if "Cotton is King" it is high time that some limit should be set to its dominions; for it appears that this impersonal and soulless monarch has extended its government to Liverpool and Manchester more than to either New York, Philadelphia, or New England.

I cannot tell you the the sensations of pain with which the loyal citizens of this Republic noticed the vacillating and, as we thought, unmanly course of the British Cabinet on the first news of the rebellion, which under the false pretence of "secession" has boldly sought to upturn the most thoroughly popular government on earth. Years will not suffice to blot out the impression which the ill-disguised though but temporary connivance of your Cabinet with this traitorous cotton insurrection has produced in America; and nothing but the conviction that the heart of the English *people* is true to the cause of good government, and of constitutional liberty here as at home, can restore again the friendship and good feeling which our common origin, language, laws, religion, and extensive ramifications of trade, are so well calculated to foster and perpetuate.*

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* We cannot join with our esteemed correspondent in censuring the British Cabinet, nor can we regard the secession of the Southern States as a mere rebellion.—Ed.

Kerosolene.—In looking over the pharmaceutical field for something to interest your readers during the dearth which the wicked rebellion has produced, I met with nothing of more interest than the discovery, in Boston, of a new anæsthetic made from coal-oil. What will not grow out of coal? We have napthaline, aniline, benzine, kerosene, besides the less familiar quinoline or chinoline and azuline, so much used for the preparation of colours, and so well described by Mr. Perkins at the May Meeting of the Chemical Society. You are aware, through articles in the *Chemist and Druggist*, that extensive under-ground reservoirs of coal-oil have recently been found in the western part of the States of Pennsylvania and Virginia, and that vast quantities of this oil are being pumped up and thrown into commerce. The business of rectifying this for use in illumination, and for lubricating machinery, has grown to considerable importance. At one of these rectifying establishments the discovery was recently made of the anæsthetic properties of the most volatile product of this distillation, by its effects on a man sent to clean one of the cisterns containing it.

Subsequent experiments seem to show that *Kerosolene*, as it has been called, is an anæsthetic of the same kind as ether and chloroform, though more powerful, and more likely to produce headache—probably more dangerous. Its physical properties recommend it in the highest degree; it is very volatile, tasteless, colourless, with a slight odour reminding of chloroform though less distinct, inflammable, though less so than ether, and burning with a dense white light. Those familiar with Kerosene will see that this must be a highly rectified product, for the oil itself, as used for burning, has too little volatility, and is too disagreeable in its odour to allow of any such use. The abundance and cheapness of Kerosolene is, however, most remarkable, for it has heretofore been to some extent a waste product, owing to its volatility unfitting it to be used for illumination, even when mixed with the less volatile products coming over later in the process of rectification. The specimens I have seen have been rectified a second time by distillation from sulphuric acid; they possess many remarkable properties, suggesting other uses than that I have mentioned, which can only be announced when submitted to the test of experiment.

Right to Prescribe.

Liverpool, June 17th, 1861.

Sir,—As your correspondent, "An Old Pharmaceutical Chemist," has, I think, misunderstood my letter, allow me to correct him. A chemist, I know, cannot legally recover payment for medicine prescribed by him; at least, not if there is any indication that he has acted the part of a medical man: neither can a physician, unless the law has been lately altered, recover either for prescribing or for medicine. I did not advocate that a chemist has the same legal position which many statutes have conferred upon medical men, and it would be very foolish for us to assume anything of the kind. I shall be glad to be corrected if I am in error, but I maintain that our right to prescribe or recommend (prescribe is a modern word) our medicines has never been taken from us. We possessed and practised this right long before any statute law whatever was enacted on the subject. I do not know much about law, but I believe in England, whatever right has been long possessed or practised as a custom, is called common law,—equal in force and often superior to statute law. In all the legal decisions which I have seen given against the chemist, it has not been allowed to rest simply upon his having prescribed, but it has been made out that he has acted as a medical man; treated a disease, visited, felt the pulse, looked at the tongue,—some one or all these acts have been added to the prescribing, in order to make it a violation of the law. I know that the *doctors* and many others deny that we have this right, and laws are constantly being made, out of which the judges will make out a case against us, on the ground that we have lost our privileges by *lapsed custom;* but I deny that any statute law has yet been made directly to deprive us: if so, and it is fairly carried out, not one in a hundred chemists can carry on his business. I shall be glad to see that this subject is taken up—it is *vital.* We must conquer here, or sooner or later it will crush us into mere lackeys to the profession. I am afraid it has never been fairly looked into.—I am, Sir, yours truly, Joseph Ball.

A Great Fact.

Sunderland, July 30th, 1861.

Dear Sir—It has been tritely said of the volunteer movement, that it has now become "a great fact;" and if we look at your valuable periodical, not confined in its circulation, as we see, to our own empire, but extending to so many countries abroad, and culling from, and imparting to each whatever is useful, practical, and interesting—it must be allowed that the *Chemist and Druggist* is also "a great fact." Its growing usefulness may be learnt from your explanatory leader in the May number, and, as the first fruits of its labours, we may point to the successful formation of the "United Society"—a work which, though its advantages are so apparent, had never before been accomplished. The power thus displayed by your Journal—yet in its infancy—gives us good ground to hope that, as it increases in years, or rather months, we may expect still greater boons.

The above thoughts occurred to me in going through your recent numbers, and should they merit insertion, perhaps a spare corner may be at liberty for that purpose. I would suggest that a subscriber, on perusing a fresh number of the Journal, should ask himself the following questions, and that after having answered them to his own satisfaction, he should take prompt steps to give a practical turn to the knowledge acquired by this process of self-catechising—whether those steps be the adopting of novelties recommended, entering into correspondence with patentees, or making his own processes known to his brethren. I submit, he would himself be benefited, his fellow members would profit, the trade generally would be improved, and your periodical would necessarily share in the common good.

1. Am I buying in the cheapest market and receiving the best value for my money?

2. Is there any process, improvement, or discovery in pharmacy, chemistry, or general trade, whereby time may be saved, economy practised, neatness and novelty gained, and, *par consequence*, business extended?

3. Does this number, in its literary or advertisement sheets, point out any of the foregoing requirements?

4. Does it note any process or recipe which is not so good as that which I adopt, or does it advertise any article which I can supply on better terms?

I am, dear Sir, yours respectfully,
W. B. Harrison.

Patent Medicine Stamp Act.

Exeter, July 16th, 1861.

Sir,—Will you kindly find a place for the following in your next impression, and favour me with your opinion on the matter. A neighbour of mine, Mr. Ackland, has been fined 10*l.* (mitigated to 2*l.*) for selling a preparation, labelled "Tincture for Tooth-ache," without a stamp on it; and among several other labels which he sent to the Commissioners of Inland Revenue, the only one exempted from stamp duty was for "Extract of Elder Flowers and Glycerine," for removing sun freckles, which is stated on the label to be "prepared only by Robert Ackland," and is thus made a proprietary article. Now, as I understand the Stamp Act, it is limited only to those articles which the seller professes to prepare by some occult or secret process. This, at least, is the substance of the second clause of an extract from the Act which the Commissioners supply, and by which I am led to imagine that articles of well-known preparation are not liable to duty, even though the labels may indicate their suitability for various complaints and affections. The Commissioners, however, say that every label which specifies the use of the article for any complaint is subject to duty, whether the preparation be a secret or not; as, for instance, the "Tooth-ache Tincture" for which Mr. Ackland has been fined. The Commissioners will readily furnish an extract of the Act, but they do not seem to be able to tell us plainly what is liable and what is exempt. Will you, therefore, kindly oblige me with your opinion as to whether the enclosed labels, "Arnicated Cerate," for broken chilblains, "Arnica Collodion," for cracked nipples and lips, &c., come within the meaning of the Act, and therefore require stamps. Another chemist in this city has also been fined for selling an article without a stamp, the label of which describes its use in the cure of sore diseases. The imposition of this fine, which is evidently the work of a common informer, has put most of the chemists in this city on their guard, but none can clearly understand the meaning of the Act.—I am, Sir, yours &c., J. H. H.

[We beg to refer our correspondent to the legal adviser of the United Society of Chemists and Druggists. An exposition of the law relating to the sale of medicines has already appeared in our Journal (Nos. 14 and 16.) A note on legal queries will be found in another part of the present number.—Ed.]

NOTES AND QUERIES

Erratum.—In the last part of Mr. Reynolds' paper on the "Aniline Dyes," a mistake occurred which it is desirable to rectify, lest it might mislead any one making experiments on the production of the colours. It is stated that on adding to the solution of aniline in hydrochloric acid a solution of chloride of *sodium*, the colour *mauve* would be instantly developed. This action certainly will not take place with chloride of *sodium*, but it will with hypochlorite of *soda*, or, as it is commonly known, chloride of *soda*. The author in his manuscript used the latter word, and it was altered by mistake in the proof-sheets.—Ed.

Home Studies.—H. R., who requests us to send him a list of the most important books he ought to study during his apprenticeship, will find an article in the second number of our journal giving much valuable information on the course of study to be pursued by the younger members of the trade.

Aniline.—W. C. N. (Cork), may obtain commercial aniline from almost any manufacturing chemist. R. Holliday, tar works, Huddersfield, or warehouse, 128, Holborn Hill, London, will supply any quantity of this product. Bolton and Barnitt, 146, Holborn Bars, London, are manufacturers.

Legal Queries.—D. O. (Berwick-on-Tweed), W. H. H. (Great Yarmouth), and several other correspondents who have solicited our opinion on questions connected with law, are respectfully referred to the legal adviser of the United Society of Chemists and Druggists. We cannot spare the time required to get at the meaning of an Act of Parliament, and we do not care to incur the responsibility of giving legal advice. W. H. H. will find a letter touching upon the Patent Medicine Stamp Act in our columns of correspondence.

Nitro-Muriatic Acid.—R. O. P. (Swansea).—The formula given in the Dublin Pharmacopœia for the preparation of acid. nitro-muriaticum is as follows:—Nitric acid 1 part, hydrochloric acid 2 parts (both by measure), mix in a refrigerated bottle, and keep the mixture in a cold and dark place.

Slugg's Microscope.—B. J. B. C. writes:—Can you inform me, through the medium of your journal, whether Slugg's Microscope is sufficiently powerful and accurate to detect adulteration in powders, &c., and whether any additional apparatus is required more than what is included with the higher priced one at 2*l.* 10*s.* 6*d.* [We have used one of these instruments for some time to detect adulteration, and can speak most favourably of it. The whole of the apparatus required is furnished with the microscope.—Ed.]

Drying a Cow.—A. Palmer (Newcastle, County Limerick), writes as follows:—In reply to your correspondent, A. B., I send you a formula, not for an ointment to rub on the udder, but for a drench, which will produce the desired effect:—Take roche (or burnt) alum, and common alum, of each four ounces, mixed in a pint of skimmed milk, and drench the cow with it. Let her be thoroughly well milked the same day, and bled, but not milked after. This is an infallible remedy.

Harness Blacking.—E. V. sends the following recipe for our last month's querist, X. Y. Z. It has been in use for a considerable time, and has been found to answer well:—℞. Isinglass ¼ oz., indigo in fine powder, ¼ oz., soft soap 4 ozs., glue 5 ozs., logwood 4 ozs., vinegar 2 pints, ground drop black ½ oz. Infuse the logwood in vinegar for some time with gentle heat, and when the colour is well extracted strain the liquid and add the other ingredients to it; boil until the glue is dissolved, then put into jars.

Liq. Ferri Perchloridi.—A. H. (Newcastle).—The following formula, given for Liq. Ferri Muriatis, in the Dub. Ph., 1826, is doubtless what you require:—℞. Rust of iron 1 part, muriatic acid, rectified spirit āā 6 parts. Pour the acid on the rust passed into a glass vessel, and occasionally stir the mixture during three days, then set it apart that the dregs may subside, and pour off the clear liquor; by slow evaporation reduce this to one-third part, and when cold add to it the spirit.

A. P. (Glasgow) has forwarded us the following letter, which we lay before our readers in the hope that it will elicit the required information:—Having been for some time past devoting part of my attention to the manufacture of cheap Court Plaister, and having in my experiments failed to produce the bright polish or finish requisite for sale, I have taken the liberty of writing to ask if you can assist me by giving me a recipe for the same, or by requesting your readers to supply me with the desired information. The article is sold in this city at 2*s.* per yard wholesale, and the silk costs 9*d.* per yard, so that there is no possibility of isinglass being used in its preparation. I have found the following mixture to possess good adhesive properties, viz., Russian glue, gum Arabic, and white sugar, āā, water q.s., but it will not take a finish either with syrup or spirit; and the samples which I have seen, and which I have reason to believe contain gum, have had as fine a finish as if they had been prepared exclusively from isinglass. If you can suggest a finish for the above, or give me another recipe, which will suit the practical uses and price, you will greatly oblige me.

A. W. S. writes:—Can you or your readers give me a recipe for Salad Cream; also the best method of "Filling Pomades," in order to prevent an uneven appearance round the bottle; and is it illegal to write your name through a patent medicine stamp on your own preparation?

A Country Chemist would be very much obliged by any subscriber to the *Chemist and Druggist* informing him how efficiently to poison wheat, as he finds the maceration of nux vomica and drying of the wheat so troublesome.

J. P. would feel obliged by any one informing him (either privately through the Editor or publicly through this journal) where "Pure Precipitated Phosphate of Lime" can be bought, and the price per cwt.

E. J. L. & Co., Benares, are informed that their subscription is now paid in advance to the 15th of June, 1865.

"Pharmacist" requires a recipe for the granular effervescent citrate of magnesia. We fear he will find such a recipe difficult to obtain, as the possessors of it do not care to make it public.

"A Constant Reader" wishes to know the best veterinary catechism for study before entering a veterinary college. We took some trouble to answer a similar query correctly in a former number, but though we have looked through our pages we cannot find the information we then imparted. Perhaps some veterinary student will help us and our constant reader out of our difficulty.

TRADE REPORT.

London, August 13, 1861.

The money market, notwithstanding the drain of specie to America and Canada, has continued easy; so much so that the Bank Directors reduced their rate of discount, on the 1st instant, from 6 to 5 per cent. The exchange in America, however, has advanced to 107½ and 107¾ per cent., which leaves a loss to import gold to that country; so, therefore, we may look forward to a further reduction in the rates, especially as the extremely fine weather for the harvest will tend to check shipments of corn to a great extent from abroad. Business generally continues quiet, the unsettled state of affairs in America continuing to have a prejudicial effect on the market. The present rates of first-class paper is 4 and 4½ per cent. Consols closed this evening at 90⅜ and 90½ for money, and 90⅝ and 90¾ for the account.

In Chemicals business is confined to the mere wants of the buyers, and, in most cases, lower prices are accepted. Tartaric acid has declined to 1*s.* 8½*d.* and 1*s.* 9*d.*, and is dull at those rates. A good business has been done in oxalic acid at 8¼*d.* to 9*d.* according to quality. Yellow Prussiate continues dull at 1*s.* 1½*d.* to 1*s.* 2*d.* Small sales of bichromate of potass have been made at 9¼*d.* Several pounds of citric acid have been sold at 1*s.* 9*d.*, at which price the market is firm. Sal acetos is quiet at 10*d.* Iodine remains dull at 4½*d.* to 5*d.* according to quality. Flour of sulphur is quiet at 14*s.* to 14*s.* 6*d.* Cream of Tartar is dull and lower; fine, 120*s.* to 122*s.* 6*d.* Sal ammoniac is quiet: firsts, 32*s.*; seconds, 31*s.* Sulphate of ammonia is 13*s.* 6*d.* to 14*s.*, with only small sales. In sulphate of copper business has been done at the reduced price of 30*s.* Soda crystals are better; there are now no sellers under 4*l.* 7*s.* 6*d.* ex ship. Ashes quiet; Canada pot, 32*s.*, and pearl, 35*s.* to 36*s.* Turpentine is quiet, and there are now sellers of rough at 16*s.*; English spirits, 48*s.*, and American, 49*s.* Linseed oil closed quiet at 31*s.* 9*d.* per cwt.

The Drug market has been quiet, but prices have been more steady. About 1500 serons of bark are reported sold for America at former prices. Castor oil is easier; sales of fine made at 6¼*d.* to 6½*d.* Turkey opium remains quiet: good and fine sold at 17*s.* to 19*s.*; common sorts are rather cheaper. Japan camphor, finest sold at 11*l.* 10*s.* Oil of aniseed is down, sales made on the spot at 6*s.* 9*d*, and distant arrival at 6*s.* 7½*d.* Oil of cassia is down, spot 9*s.* Turkey blue galls quiet at 86*s.* to 90*s.* Cubebs sold from 7*l.* 10*s.*

PRICE CURRENT.

☞ *These quotations are the latest for* ACTUAL SALES *in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the* CASH PRICES IN BULK. *They will, however, be able to form a tolerably correct idea of what they ought to pay.*

	1861.				1860.			
	s.	d.	s.	d.	s.	d.	s.	d.
ARGOL, Cape..per cwt.	90	0..	100	0	90	0..	105	0
French	60	0..	85	0	60	0..	85	0
Oporto, white	0	0..	0	0	0	0..	0	0
red	45	0..	0	0	50	0..	52	0
Sicily	65	0..	80	0	75	0..	80	0
Naples, white	65	0..	80	0	85	0..	90	0
red	0	0..	0	0	0	0..	0	0
Florence, white	90	0..	100	0	95	0..	105	0
red	85	0..	87	6	85	0..	95	0
Bologna, white	115	0..	120	0	125	0..	130	0
ARROWROOT, duty 4½d. per cwt.								
Bermuda ....per lb.	1	1..	1	6	1	3..	1	5½
St. Vincent	0	2½..	0	6	0	2¾..	0	6¼
Jamaica	0	2½..	0	4½	0	2..	0	4
Other West India	0	2..	0	3¼	0	2..	0	3¼
Brazil	0	1½..	0	2¼	0	1½..	0	2¼
East India	0	1¾..	0	2½	0	1¾..	0	2½
Natal	0	2½..	0	7	0	3½..	0	7½
Sierra Leone	0	2½..	0	3	0	2½..	0	3½
ASHES,......per cwt.								
Pot, Canada, 1st sort	32	6..	0	0	32	0..	33	0
U. S., 1st sort	0	0..	0	0	0	0..	0	0
Pearl, Canada, 1st sort	36	0..	0	0	32	0..	32	6
U. S., 1st sort	0	0..	0	0	0	0..	0	0
BRIMSTONE,								
rough ......per ton	£7	10..	0	0	£10	0..	10	5
roll	13	10..	14	0	14	10..	15	0
flour	14	0..	14	10	16	10..	17	0
CAPERS,								
French......per cwt	£3	0..	£5	0	£3	10..	£6	15

	1861.				1860.			
CHEMICALS	s.	d.	s.	d.	s.	d.	s.	d.
Acid—Acetic, per lb.	0	4..	0	4½	0	4..	0	4½
Citric	1	9..	0	0	1	10½..	1	11
Nitric	0	3½..	0	4	0	5..	0	5½
Oxalic	0	8½..	0	9	0	8..	0	0
Sulphuric	0	0¾..	0	0	0	0¾..	0	1
Tartaric, crystal	1	8½..	1	9	1	10½..	2	0
powdered	1	10..	6	0	1	11½..	0	0
Alum ......per ton	£6	0	£0	0	£7	0	£7	5
powder	7	10..	0	0	8	10..	0	0
Ammonia, Carbon, lb.	0s.	5¾d.	0	6d.	0s.	6½d.	0	6¾
	£	s.	£	s.	£	s.	£	s.d
Sulphate ..per ton	13	10..	14	0	13	10..	14	10
Antimony, ore	16	0..	17	0	16	0..	17	0
crude, per cwt.	30s.	0d.	0s.	0d	35s.	0d.	37s.	0
regulus	50	0..	51	0	50	0..	52	0
French star	51	0..	0	0	52	0..	53	0
Arsenic, lump	17	6..	18	6	18	0..	0	0
powder	9	0..	10	6	12	6..	14	0
Bleaching Powder	9	0..	10	0	11	0..	11	3
Borax, E. I. refined	35	0..	45	0	44	0..	64	0
British	65	0..	0	0	65	0..	0	0
Brimstone, roll	13	10..	14	0	14	10..	0	0
flour	14	0..	14	6	16	10..	17	0
Calomel......per lb.	2	10..	0	0	2	10..	0	0
Camphor, refined	2	8..	3	2	2	0..	0	0
Copperas, green, pr tn.	65	0..	0	0	65	0..	0	0
Crrsiv. Sublimate, lb.	1	·11..	2	0	2	1..	0	0
Green, Emerald, pr lb.	0	9..	0	11	0	9..	1	0
Brunswick, cwt.	14	0..	42	0	14	0..	42	0
Iodine, dry ..per oz.	0	4½..	0	5	0	5¾..	0	6¼
Ivory Blk. drop pr. ct.	8	0..	9	0	0	0..	0	0

PRICE CURRENT—*continued.*

	1861.				1860.			
CHEMICALS.	s.	d.	s.	d.	s	d,	s.	d.
Magnesia, Carbon. ct.	42	6..	45	0	42	6..	45	0
Calcined, lb.....	1	6..	0	0	1	6..	0	0
Minium, red, per cwt.	22	6..	23	0	23	6..	24	6
orange	35	0..	0	0	36	0..	0	0
Potash, Bichrom., lb.	0	9½..	0	0	0	10¾..	0	11
Chlorate........	0	10¼..	0	0	0	10½..	0	11
Hydriodate ..oz.	0	5¼..	0	5½	0	6¼..	0	6½
Prussiate ....lb.	1	1½	1	2	1	3..	0	0
red..	2	2..	0	0	2	3..	0	0
Precipitate, red per lb.	2	9..	2	10	2	10..	2	11
white....	2	10..	0	0	2	10..	0	0
Prussian Blue	1	6..	1	10	1	6..	1	10
Rose Pink ..per cwt.	29	0..	30	0	29	0..	30	0
Sal-Acetos....per lb.	0	10..	0	10½	0	10¾..	0	0
Ammoniac, cwt.								
British ..	32	0..	33	0	32	6..	34	0
Epsom	8	3..	8	6	8	0..	0	0
Glauber	3	6..	5	6	5	0..	5	6
Saltpetre, refined....	37	0..	38	0	42	0..	43	6
Soda, Ash, per degree	0	2⅓..	0	2¼	0	2⅝..	0	2⅞
Bicarbonate ...cwt.	13	0..	13	6	15	0..	0	0
Crystals....per ton	£4	5/	£0	0/	£5	0/	.£0	0
Sugar Lead, white, ct.	37s.	0d.	38s.	0d.	0s.	0d.	39s.	0d.
brown..........	28	0..	0	0	28	0..	0	0
Sulphate Quinine, oz.								
British in bottle ..	7	2..	7	6	7	9..	8	0
Foreign	6	6..	6	9	7	4..	7	6
Sulphate Zinc ...cwt.	14	6..	15	0	14	6..	15	0
Verdigris ....lb.	1	3..	1	5	1	3..	1	6
Vermillion, English..	3	0..	3	4	3	0..	3	4
China....	2	3..	2	8	2	10..	3	2
Vitriol, blue or Roman								
per cwt...	31	6..	32	0	35	6..	0	0
CHICORY.... per cwt.								
Foreign (duty, 6s.) ..	17	0..	17	6	13	6..	0	0
COCHINEAL...per lb.								
Honduras, black....	2	10..	4	8	3	8..	5	3
silver	2	6..	3	2	3	2..	4	0
pasty	2	1..	2	4	2	10..	3	1
Mexican, black......	2	6..	3	2	3	5..	4	0
silver......	2	6..	2	6	3	0..	3	3
Lima	2	6..	3	2	3	3..	4	0
Teneriffe, black	2	3..	3	4	3	6..	4	1
silver	2	7..	2	9	3	1..	3	5
COCOA (duty 1d. per lb.)								
Trinidad, red, in								
bond......per cwt.	58	0..	90	0	70	0..	96	0
gray	50	0..	60	0	64	0..	68	0
Grenada............	48	0..	56	0	60	0..	68	0
Dominica & St. Lucia	48	0..	50	0	58	0..	62	0
Para	54	0..	58	0	64	0..	68	0
Bahia..............	50	0..	51	0	54	0..	57	0
Guayaquil	53	0..	55	0	68	0..	70	0
COFFEE, in bond (duty 3d. per lb.)								
Jamaica, good, mid.								
to f................	73	0..	100	0	72	0..	94	0
low mid. & mid.	68	0..	72	0	65	0..	70	0
fine ordinary ..	65	0..	67	0	62	0..	64	0
good ordinary ..	62	0..	64	0	59	0..	61	0
ord. and triage..	50	0..	60	0	46	0..	59	0
Ceylon, Nat. gd. & f.	61	6..	63	0	59	6..	63	0
ordinary	57	0..	61	0	55	0..	58	6
Plantation, fine..	85	0..	88	0	87	0..	92	0
fine mid.	77	0..	84	0	79	0..	86	0
good mid.......	72	6..	76	0	75	0..	78	0
middling	68	6..	72	0	70	0..	74	0
fi. ord. to low md.	65	0..	67	6	64	0..	69	0
mixed and triage	50	0..	63	0	48	0..	65	6
Malabar and Mysore	58	0..	78	0	57	0..	78	0
Madras	58	0..	76	0	58	0..	76	0
Tellicherry	64	0..	90	0	62	0..	89	0
Mocha, fine	110	0	123	0	112	0	123	0
garbled	93	0	105	0	94	0	110	0
ungarbled	62	0..	100	0	62	0..	86	0
Batavia, yellow	63	0..	75	0	65	0..	78	0
pale and mixed..	58	0..	62	0	56	0..	64	0
Sumatra............	52	0..	54	0	50	0..	53	0
Padang	54	0..	60	0	54	0..	58	0
African	66	0..	85	0	80	0..	90	0
Brazil, f. ord. & wshd.	56	0..	70	0	60	0..	72	0
good ord.	52	0..	54	0	57	0..	61	0
ordinary	45	0..	50	0	51	0..	57	0

	1861.				1860.			
COFFEE.	s.	d.	s.	d.	s.	d.	s.	d.
La Guayra	60	0..	76	0	62	0..	78	0
Costa Rica, mid. to f.	68	0..	78	0	68	0..	82	0
good and f. ord.	63	0..	67	0	62	0..	68	0
Cuba, mid. to fine ..	67	0..	80	0	68	0..	82	0
f. ord. & f. f. ord.	63	0..	66	0	62	0..	68	0
ord. & good ord.	57	0..	62	0	55	0..	62	0
Porto Rico	60	0..	78	0	62	0..	78	0
St. Domingo........	57	0..	61	0	56	0..	65	0
DRUGS,	£.	s.	£.	s.	£.	s.	£.	s.
Aloes, Hepatic, pr. cwt.	3	10..	9	0	3	10..	9	10
Socotrine	6	0..	23	0	5	10..	24	10
Cape, good......	2	0..	2	4	1	15..	1	18
inferior ..	1	8..	1	18	1	2..	1	14
Barbadoes	2	0..	22	0	2	0..	22	10
Ambergris, gray, p. oz.	34s.	0d.	42s.	0d.	35s.	0d.	42s.	0d.
Angelica Root. pr. cwt.	20	0..	35	0	35	0..	42	0
Aniseed, China star ..	68	0..	75	0	81	0..	85	0
German, &c.	26	0..	44	0	32	0	42	6
Balsam, Canada, pr. lb.	1	4..	0	0	1	0..	1	1
Capivi	1	8..	1	9½	1	11..	2	1
Peru.........	4	7..	4	9	4	10..	4	11
Tolu	3	9..	3	10	3	3..	3	5
Bark, Cascarilla, cwt.	24	0..	49	0	26	0..	44	0
Peru. crwn. & gry. pr. lb.	1	2..	2	6	1	10..	3	4
Calisaya, flat ..	3	6..	4	0	4	0..	5	6
quill ..	3	4..	3	9	3	9..	4	10
Carthagena	0	10..	2	0	0	8..	1	0
Pitayo	1	6..	2	2	0	10..	2	0
Red	2	0..	6	0	2	0..	6	0
Bay Berries, per cwt,	22	0..	40	0	22	0..	40	0
Borax...............	20	0..	45	0	20	0..	37	6
Tincal	32	0..	55	0	30	0..	45	0
Bucca Leaves ....lb.	0	4 ..	1	8	0	5..	1	2
Burgundy Pitch, p. cwt.	0	0..	0	0	0	0..	0	0
Camomile Flowers..	30	0..	60	0	140	0	190	0
Camphor, China....	230	0	235	0	160	0	170	0
Canella Alba........	20	0..	40	0	25	0..	45	0
Cantharides ..per lb.	2	1..	2	2	2	7..	2	8
Cardmms. Mlbr. good	4	6..	4	7	4	4..	4	7
inferior ..	4	0..	4	5	3	10..	4	3
Madras ..	2	10..	4	3	3	0..	4	3
Ceylon ...	3	6..	4	0	3	6..	3	9
Cassia Fistula, pr. cwt.	13	0..	23	0	14	0..	25	0
Castor Oil, 1st pale, lb.	0	6¼	0	6½	0	6..	0	6½
second	0	5½	0	6	0	5½	0	5¾
infr. and dark	0	4¾	0	5¼	0	5..	0	5¼
Bombay, in casks	0	4¼	0	5	0	3½	0	4
Castorum	1	0..	28	0	5	0..	20	0
China Root..per cwt.	9	0..	10	0	9	0..	10	0
Coculus Indicus	12	0..	16	0	15	0..	16	0
Cod-liver Oil, per gal.	4	9..	5	0	4	9..	6	9
Colocynth, apple, p. lb.	0	8..	1	3	0	11..	1	9
Colombo Root, per cwt.	15	0..	47	6	14	0..	47	0
Corosus Nuts, per cwt.	13	0..	23	6	14	0..	25	0
Cream Tartar, per cwt.								
French	120	0..	0	0	140	0..	0	0
Venetian	122	6..	0	0	142	6..	0	0
gray	112	6	115	0	125	0	127	6
brown..........	107	6	112	6	118	0	120	0
Croton Seed........	90	0	105	0	70	0..	80	0
Cubebs	150	0..	0	0	225	0	230	0
Cummin Seed	36	0..	40	0	26	0..	32	0
Dividivi............	13	6..	14	0	11	6..	12	6
Dragon's blood, reed.	£8	0	£12	0	£7	0	£14	0
lump	4	0..	10	0	5	0..	13	0
Galangal Root......	0	18..	22	0	1	6..	1	8
Gentian Root	0	15..	0	17	0	16..	0	17
Ginger, preserved, in bd.	s.	d.	s.	d.	s.	d.	s.	d.
(duty 2d. lb.) per lb.	0	4..	0	6	0	9..	0	9½
Guinea Grains.								
per cwt.	46	0..	50	0	67	0..	69	0
Honey, Narbonne ..	60	0..	85	0	70	0..	90	0
Cuba	25	0..	40	0	26	0..	38	0
Jamaica	26	0..	56	0	28	0..	55	0
Ipecacuanha, per lb..	4	0..	4	3	3	9..	3	11
Isinglass—								
Brazil............	1	0..	4	2	1	10..	4	2
East India........	0	8..	3	0	1	10..	4	3
West India	3	2..	3	8	3	9..	4	2
Russian, long staple	12	0..	13	0	0	0..	0	0
leaf......	9	6..	12	0	0	0..	0	0
Simovia..	2	0..	2	6	1	6..	2	6
Jalap..............	2	6..	4	6	4	2..	4	

PRICE CURRENT—*continued.*

	1861.				1860.			
DRUGS.	s.	d.	s.	d.	s.	d.	s.	d.
Juniper Berries, p. cwt.								
German and French	10	0..	10	6	9	0..	9	6
Italian	10	0..	12	0	9	0..	10	0
Lemon Juice, per deg.	0	0⅞..	0	1	0	0⅞..	0	0
Lichen Islandicus, lb.	0	0..	0	0	0	0..	0	0
Liquorice ... per cwt.								
Spanish	83	0..	90	0	83	0..	93	0
Italian	85	0..	95	0	90	0..	98	0
Macaroni, Genoa, p.lb.	0	3..	0	6	0	3..	0	6
Naples	0	4..	0	5½	0	4..	0	5½
Manna, flaky	3	0..	3	9	4	9..	5	3
small	1	6..	2	0	2	6..	2	7
Musk ....per oz.	20	0..	34	6	24	0..	30	0
Myrabolans, per cwt.	8	6..	12	0	9	6..	13	6
Nux Vomica	8	0..	9	0	13	0..	14	6
Opium, Turkey	14	0..	19	0	16	6..	19	0
Egyptain	6	0..	13	0	6	0..	13	6
Orris Root.. per cwt.	27	0..	30	0	28	0..	31	0
Pellitory Root	0	0..	0	0	0	0..	0	0
Pink Root....per lb.	1	9..	1	11	1	0..	1	3
Quassia (bit.wd.) ton	£3	10..	4	0	£5	0	£0	0
Rhatania Root.. p lb.	1s.	0d.	0s.	0d	0s.	6d.	0s.	8d
Rhubarb, China, rnd.	0	10..	2	6	1	0..	2	6
flat..	1	0..	2	9	1	2..	2	9
Dutch, trimd.	3	0..	3	6	3	3..	3	6
Russian	11	6..	0	0	13	6..	14	6
Saffron, Spanish	47	6..	49	0	51	0..	53	0
Salep......per cwt.	£12	0s.	£12	10	£9	0	£12	0
Sarsaparilla, Lima..	0s.	11d..	1s.	2d	0s.	10d..	1s.	2d
Para	0	10..	1	2	0	10..	1	2
Honduras	0	11..	1	6	0	11..	1	6
Jamaica	1	3..	2	3	1	3..	2	6
Sassafras....per cwt.	10	0..	12	0	10	0..	12	0
Scammony .. per lb.								
virgin	28	0..	35	0	28	0..	30	0
second	14	0..	24	0	14	0..	24	0
Seedlac	60	0..	90	0	42	0..	60	0
Seneka Root	2	8..	0	0	2	0..	2	2
Senna, Calcutta	0	1½..	0	2½	0	2..	0	2½
Bombay	0	1½..	0	3	0	2..	0	4¼
Tinnevelly	0	2 ..	0	11½	0	4..	0	7¾
Alexandria	0	4..	0	6½	0	4..	0	6
Shellac, orange, pr.ct.	190	0	217	6	205	0..	212	6
liver & garnet.	165	0	190	0	200	0..	210	0
block	140	0	160	0	185	0..	200	0
bttn.dk.to mid.	130	0	155	0	175	0..	190	0
good and fine.	160	0	200	0	195	0..	210	0
Snake Root	1	8 ..	1	9	1	2..	1	3
Spermaceti, refined..	1	1..	1	2½	1	8..	0	0
Squills	0	1..	0	2½	0	2..	0	4
Sticklac	70	0..	95	0	60	0..	90	0
Tamarinds, E. India.	10	0..	12	0	7	6..	10	0
W.I. per cwt.	16	0..	32	0	16	0..	36	0
Terra Japonica,								
Gambier.. per cwt.	15	0..	16	0	17	6..	18	0
Cutch	21	6..	23	0	26	6..	27	0
Valerian Root, Engl.	20	0 .	40	0	20	0..	40	0
Vanilla,								
Mexican .. per lb.	20	0..	45	0	35	0..	75	0
Brazil	0	0..	0	0	0	0..	0	0
Wormseed ..per cwt.	2	0..	0	0	0	0..	0	0
FARINA, Scotch	20	0..	25	0	16	0..	16	6
GUM ....per cwt.	£.	s.	£.	s.	£.	s.	£.	s.
Ammoniac, drop	2	15..	5	0	2	15..	5	0
lump	0	12..	1	15	0	15..	2	0
Animi, fine pale	15	0..	16	0	14	10..	16	0
bold amber..	13	0..	14	0	13	0..	16	5
medium	8	10..	11	0	8	10..	11	10
small & dark.	5	0..	8	5	5	0..	8	0
ordinary dark	2	10..	5	0	2	10..	5	0
Arabic, E.I.f.palepickd	2	10..	2	17	2	13..	3	3
unsorted, good to f.	1	18..	2	10	1	18..	2	10
red and mixed	1	4..	1	10	1	8..	1	16
siftings	0	0..	0	0	0	18..	1	3
Turkey, pkd. gd. to fl.	5	10..	7	5	5	10..	7	10
second & infr.	2	2..	5	5	2	5..	5	5
in sorts	1	10..	2	3	1	16..	2	3
Gedda	1	5..	1	7	1	6..	1	8
Barbary, white	1	11..	1	12	1	13..	1	16
brown	1	6..	1	7	1	8..	1	11
Cape	0	16..	0	18	0	15..	0	18
Assafœtida, fair to gd.	1	0..	5	0	1	0..	4	10
Benjamin, first qual.	18	10..	36	0	18	0..	35	0

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GUM.	£.	s.	£.	s.	£.	s.	£.	s.
Benjamin, 2nd qual.	8	5..	17	10	8	0..	16	10
3rd ,,	3	0..	7	10	3	0..	7	10
Copal, Angola red ..	5	0..	6	5	4	10..	4	15
pale..	4	5..	5	5	3	6..	4	10
Benguela	4	0..	5	10	3	10..	4	5
Sierra Leone lb.	0s.	6d.	1s.	6d	0s.	9d.	1s.	9d
Manilla, pr. ct.	12	0..	40	0	15	0..	43	0
Dammar, pale, pr. ct.	44	0..	48	0	44	0..	48	0
	£.	s.	£.	s.	£.	s.	£.	s.
Galbanum	7	0..	9	0	7	0..	9	0
Gamboge, pkd. pipe .	6	0..	8	0	6	10..	8	10
in sorts ..	4	0..	5	10	4	0..	5	15
	s.	d.	s.	d.	s.	d.	s.	d.
Guaiacum ....per lb.	0	8..	1	6	0	10..	1	9
Kino ...... per cwt.	100	0..	140	0	95	0..	120	0
Kowrie	16	0..	18	0	14	0..	15	6
Mastic, pkd., per lb..	7	0..	8	6	8	6..	9	6
Myrrh, gd.& fi., pr. ct.	140	0	180	0	160	0	220	0
sorts	80	0	130	0	90	0	150	0
Olibanum, pale drop.	60	0..	64	0	60	0..	68	0
amber & yellow	40	0..	54	0	40	0..	56	0
mixed & dark..	10	0..	26	0	12	0..	26	0
Senegal	36	0..	45	0	28	0..	33	0
Sandrac	90	0	100	0	94	0	117	6
Tragacanth, leaf	180	0	340	0	190	0	340	0
in sorts .	100	0	130	0	100	0	126	0
LAC DYE, per lb. D. T.	1	9 ..	1	10	1	10½..	2	1
B Mirzapore	1	6..	1	7	1	7..	1	9
Other good and fine..	1	0..	2	5	1	1..	2	3
Ord. & Native marks	0	2..	0	11	0	2 ..	0	11
OILS..........per tun	£.	s.	£.	s.	£.	s.	£.	s.
Seal, pale	36	0..	0	0	35	0..	0	0
yellow	32	0..	34	0	31	10..	32	0
brown	31	0..	0	0	30	0..	0	0
Sperm, body	93	0..	94	0	100	0..	0	0
headmatter	91	0..	92	0	102	0 .	95	10
Cod	35	0..	0	0	35	0..	0	0
Whale, Greenland ..	0	0..	0	0	37	0..	37	5
South Sea, pale	35	10..	0	0	35	10..	0	0
yellow	32	10..	0	0	32	10..	0	0
brown	31	0..	0	0	30	0..	0	0
E. I. Fish	29	10..	30	0	28	10..	0	0
Olive, Galipoli ..tun	58	0..	59	0	60	0..	0	0
Trieste	56	0..	0	0	58	0..	0	0
Levant	52	0..	0	0	55	0..	56	0
Mogadore	48	10..	49	0	53	0..	0	0
Spanish	56	0..	0	0	60	0..	0	0
Sicily	54	0..	0	0	57	0..	58	0
Florence, pr.½-chst.	0	19..	1	0	0	16..	0	0
Cocoanut, Cochin, tun	44	0..	45	0	48	10..	49	0
Ceylon	43	6..	44	0	46	10..	47	0
Sydney ..	38	0..	43	0	40	0..	45	0
Ground Nut and Gin.								
Bombay	39	15..	40	0	38	0..	0	0
Madras	41	0..	42	0	42	0..	45	0
Palm, fine	42	0..	42	9	45	0..	0	0
Palm Nut	36	0..	0	0	36	0..	0	0
Linseed	32	0..	0	0	28	10..	29	0
Rapeseed, Engl. pale.	42	0..	0	0	44	0..	0	0
brown	40	0..	0	0	41	0..	42	0
Foreign do.	41	0..	43	0	44	10..	46	0
brown	40	0..	40	10	42	0..	42	10
Lard	54	0..	0	0	63	0..	64	0
Tallow	40	0..	0	0	30	0..	0	0
Rosin	0	0..	0	0	7	5..	0	0
OILS, Essential;	s.	d.	s.	d.	s.	d.	s.	d.
Almond, essen. pr. lb.	30	0..	31	0	30	0..	31	0
expressed..	1	0..	0	0	1	0..	0	0
Aniseed	6	9..	7	0	7	6..	7	8
Bay........ per cwt.	122	6..	0	0	122	6..	0	0
Bergamott....per lb.	6	6..	14	0	6	6..	11	0
Cajeputa, bond, pr.oz.	0	1½..	0	1¾	0	1..	0	1¼
Caraway .... per lb.	4	3..	6	0	4	3..	6	0
Cassia	9	0..	0	0	12	0..	12	3
Cinnamon (inb.) p.oz.	1	6..	3	0	3	0..	4	3
Cinnamon Leaf	0	2..	0	4	0	2 ..	0	2½
Citronel	0	4 ..	0	0	0	3¼..	0	3¾
Clove	0	4 ..	0	0	0	2½..	0	3¾
Croton	0	3 ..	0	4	0	4¼..	0	4½
Juniper......per lb.	1	10..	4	0	1	10..	4	0
Lavender	2	6..	5	0	2	6..	5	0
Lemon	5	0..	10	6	5	0..	10	0
Lemongrass..per oz.	0	4½..	0	6½	0	5 ..	0	6¾

PRICE CURRENT—*continued.*

	1861.				1860.			
OILS, Essential,	s.	d.	s.	d.	s.	d.	s.	d.
Mace, ex	0	2	0	0	0	1¾	0	0
Neroli	6	0	9	0	6	0	10	0
Nutmeg	0	1¾	0	2	0	2½	0	3
Orange ......per lb.	7	0	8	0	10	2	11	0
Otto Roses ..per oz.	16	0	25	0	16	0	26	0
Peppermint ..per lb.								
American	7	6	12	6	8	0	13	0
English	32	0	38	0	24	6	30	0
Rhodium ....per oz.	3	9	6	0	3	9	6	0
Rosemary ....per lb.	1	10	3	0	1	10	3	0
Sassafras	3	0	3	6	3	6	3	9
Spearmint	5	0	12	6	5	0	12	6
Spike	1	3	1	6	1	3	1	6
Thyme	1	9	2	6	2	0	3	0
PITCH, British, pr. cwt.	6	0	6	6	10	0	0	0
Swedish	10	3	0	0	10	0	15	0
SALTPETRE, per cwt.								
Bengal, 6 p.c. or under	35	6	36	6	43	6	44	6
over 6 per cent.	33	0	35	0	38	0	43	0
Madras	32	0	34	0	36	0	41	0
Bombay	30	0	31	6	35	0	37	0
British-refined	37	0	38	0	42	6	44	0
Nitrate of Soda	13	0	13	6	13	6	14	0
SEED, Canary ...p. qr.	30	0	46	0	52	0	60	0
Caraway, English, p.c.	0	0	0	0	0	0	0	0
German, &c.	0	0	0	0	30	0	38	0
Clover, English, red..	0	0	0	0	0	0	0	0
white..	0	0	0	0	0	0	0	0
Germ. & French, red	0	0	0	0	0	0	0	0
white..	0	0	0	0	0	0	0	0
Coriander	0	0	0	0	0	0	0	0
East India	0	0	0	0	11	6	12	6
Hemp	46	0	52	0	42	0	44	0
Linseed, English, p. qr.	52	0	56	0	0	0	0	0
Black Sea and Azof	55	0	0	0	49	0	50	0
Calcutta	55	0	56	0	51	0	0	0
Bombay	58	0	0	0	53	6	0	0
Egyptian	53	0	54	0	47	0	0	0
St. Ptrsbg.. Morshnk	52	0	53	0	48	6	0	0
Archangel	50	0	51	0	40	0	41	0
Riga	46	0	50	0	38	0	40	0
Mustard, brown, p. bhl	5	0	12	0	0	0	0	0
white	5	0	10	0	0	0	0	0
Niger	50	0	0	0	44	0	45	0
Poppy, E.I. ..per qr.	57	6	59	0	55	0	0	0
Rape, English	0	0	0	0	0	0	0	0
Danube	61	0	0	0	58	6	60	0
Calcutta, fine	57	0	58	0	57	0	0	0
Bombay, Guzerat	65	0	66	0	68	0	0	0
Feroze. & Scinde	56	0	60	0	52	0	59	0
Teel, Sesame or Gngly.	63	0	67	0	59	0	66	0
Cotton ......per ton	7	10	0	0	7	0	7	10
Gnd. Nut Kernels, tn.	315	0	330	0	310	0	320	0
SOAP, Lond. yel. p. cwt.	21	0	38	0	21	0	38	0
mottled	34	0	38	0	36	0	38	6
curd	52	0	0	0	52	0	0	0
Castile	37	0	40	0	37	0	40	0
Marseilles	40	0	41	0	40	0	41	0
SOY, China ..(per gal.)	2	0	2	3	4	1	4	2
Japan	0	8	0	10	0	0	0	0
SPICES, duty free, except pepper,								
Cassia Lignea, p. cwt,	78	0	88	0	80	0	90	0
Vera	12	6	50	0	12	0	50	0
Buds	200	0	210	0	200	0	210	0
Cinnamon, per lb.								
Ceylon, 1st quality.	1	5	2	7	1	6	2	1
2nd ditto ..	1	2	1	10	1	1	1	7
3rd ditto ..	0	9	1	4	0	10	1	2
Tellicherry	0	10	1	0	0	9	1	0
Cloves, Penang	1	1½	1	3	1	0	1	4
Amboyna	0	4½	0	5½	0	4¼	0	5¼
Zanzibar	0	3¾	0	4⅝	0	3⅝	0	3⅞
Ginger	£	s.	£	s.	£	s.	£	s.
Jamaica, fine pr. cwt.	7	0	9	10	7	0	10	0
ord. to good	2	0	6	0	3	10	6	10
African	32s.	0d.	33s.	6d.	35s.	0d.	37s.	0d.
Bengal	30	0	32	0	22	0	22	0
Malabar	34	0	38	0	33	0	34	0
Cochin	40	0	105	0	70	0	130	0
Mace, 1st qlty. lb.	1	6	1	10	1	8	2	6
2nd. & infr.	0	10	1	4	1	1	1	6
Nutmegs per lb.								
brown Penang, &c.	0	11	4	0	1	6	3	10
limed	0	10	2	6	1	4	2	4

	1861.				1860.			
SPICES,	s.	d.	s.	d.	s.	d.	s.	d.
Pepper (duty 6d. pr. lb.)								
Black, in bond								
Malabar	0	4¼	0	5¼	0	4⅞	0	5½
Aleppee	0	4¼	0	4½	0	4½	0	4⅝
Penang & Batavia	0	3⅜	0	3¾	0	3¾	0	4⅛
Singapore	0	3¾	0	4	0	4	0	4⅛
White, Tellicherry.	0	10¼	1	5	0	9¾	1	0½
Other sorts	0	5⅜	0	6½	0	6	0	6¾
Cayenne	1	1	1	6	0	10	1	4
Pod, S. Leone pr. c.	27	0	32	0	28	0	33	0
Zanzibar	70	0	80	0	57	0	61	0
Long	32	0	37	0	32	0	38	0
Pimento, mid. to good	0	2¾	0	3	0	3½	0	3⅝
ordinary	0	2½	0	2⅝	0	3¼	0	0
SPONGE, Turk. f. pkd.	20	0	26	0	20	0	26	0
fair to good	9	0	18	0	9	0	18	0
ordinary ..	3	0	8	0	3	0	8	0
Bahama ..	0	4	1	3	0	3	1	0
TEA (duty 1s. 5d. per lb.) in bond.								
Congou, ordinary	0	6½	0	8	1	2½	1	3½
good ordinary	0	9	0	10	1	3¼	1	4½
but middling.	0	10	1	0	1	5	1	6
blackish leaf	1	2	1	4	1	6¼	1	7
ditto strong	1	6	1	9	1	8	1	10
ditto to extra fine..	1	9	2	5	2	0	2	2
Ning Yong and Oolong	0	10	2	0	1	5	2	2
Souchong, ordinary..	0	10	1	0	1	4	1	5
fair to fine	1	2	1	8	1	6	2	0
finest	2	0	4	0	2	0	3	0
Flowry Pekoe, ordinary	1	3	1	6	0	0	0	0
fair to good	1	6½	2	0	1	8	2	6
fine to finest	2	6	4	0	3	0	6	0
Caper, scented, in bxs.	0	8	2	1	1	0½	2	4
Orange Pekoe, plain..	0	9	0	10	1	3	1	6
scented	0	11	1	1	1	4	2	6
Twankay, ordy. Canton	0	0	0	0	0	0	0	0
common to good..	0	10	1	4	0	10	1	2
fine to Hyson kind.	1	5	1	6	1	3	1	4
Hyson Skin, common	0	9	1	0	0	10	0	11
good to fine	1	1½	1	4	1	0	1	1
Hyson, ordy. to comn.	1	8	1	10	1	7	1	8
fair to fine	2	0	2	6	1	9	2	6
finest	2	9	4	6	2	9	4	6
Young Hys. Boh. kind	0	0	1	0	0	7	0	9
good to fine	1	4	1	8	0	11	2	4
Imperial	1	4	1	7	1	0	2	2
Gunpowder	0	9½	2	9	1	0	3	9
Assam	1	2	4	6	1	7	4	6
TURPENTINE,								
Rough.... per cwt.	16	0	0	0	8	9	0	0
Spirits, English	48	0	0	0	31	0	0	0
American, in casks	49	0	0	0	32	0	0	0
WAX, Bees, English ..	£8	5	£8	10	£8	5	£8	10
German	8	0	8	15	8	0	8	5
American	9	0	10	0	8	10	10	0
white fine	10	0	10	10	10	0	10	15
Jamaica	8	10	9	10	8	15	9	10
Gambia	9	0	0	0	9	0	9	10
Mogadore	6	10	8	0	6	0	7	10
East India	7	10	8	10	8	0	9	0
ditto, bleached	9	0	11	0	9	0	11	0
vegetable, Japan	2	14	3	5	3	0	3	3
WOOD, Dye, bar, pr. tn.	3	5	0	0	0	0	0	0
Brazil, first quality	70	0	73	0	90	0	93	0
second quality..	55	0	60	0	60	0	0	0
logs	15	0	18	0	20	0	25	0
Braziletto	4	0	5	10	4	0	5	10
Camwood	19	0	24	0	24	0	26	0
Ebony, Green	7	0	8	10	9	10	10	0
Fustic, Cuba	8	10	9	0	8	15	9	5
Jamaica	5	10	5	15	5	5	5	15
Savanilla	5	0	5	5	5	0	5	10
Zante	7	0	9	0	9	0	0	0
Logwood, Campeachy	9	0	9	10	6	10	6	15
Honduras	6	0	0	0	5	0	0	0
St. Domingo	5	10	0	0	4	15	0	0
Jamaica	4	15	5	0	4	10	4	15
Nicaragua, lar. & sol.	8	10	0	0	11	0	12	10
small	7	10	0	0	6	0	8	0
Lima, first pile	8	0	9	0	13	10	14	5
second pile ..	7	0	7	15	12	10	13	0
Red Sanders	6	0	6	2 6*d*	5	5	5	10
Sapan, Bimas	6	10	8	0	6	0	8	0
Siam, &c.	7	0	9	0	6	0	9	0

PATENTS

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LETTERS PATENT.

DRUGS, CHEMICALS, ETC.

2777 Henrionnet, M. L., and Boblique, L. O., Paris, improvements in the treatment of fossil and other mineral phosphates of lime.

2949 Losh, W. S., Wreay Syke, Cumberland, a new method of preparing sulphurous acid in solution.

2956 Leonhardt, A., Manchester, improvements in the preparation of indigo for dyeing and printing, and in obtaining "pure" or "refined" indigo.

685 Taylor, J. J. O., Mark-lane, an improvement in the separation of silex and siliceous and other matters from steel.

INDIA RUBBER.

2932 Offord, R., jun., Wells-street, improvements in the adaptation of india rubber and compounds thereof to wheels.

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2820 Welton, T., Soho, and Monckton, E. H. C., Regent-street, improvements in the application of electricity.

2824 Lavater, M. L. J., Lambeth, improvements in portable or syphon filters.

2842 Brooman, R. A., improvements in stoppers for bottles, jars, and other like articles, parts of which are applicable as fastenings.

2943 Pelegrin, J., Bordeaux, inodorous basins and descent pipes of glass.

2963 Hughes, E. T., Chancery-lane, improvements in treating and decomposing fatty matters, and in the machinery or apparatus employed therein.

2988 Duméry, C. J., Paris, a new or improved apparatus for extracting from water or any other liquid the bodies in dissolution or in suspension contained therein.

PROVISIONAL PATENTS.

DRUGS, CHEMICALS, ETC.

894 Kernot, C. N., Isle of Wight, and Rucker, M. D., Fenchurch-street, improvements in the method of obtaining ammoniacal salts and other valuable products from liquors or substances containing ammonia, and for utilising the residuum.

1099 De Bassano, E., and Brudenn, A., Brussels, improvements in the manufacture of stearine.

1200 De Meley, A. C. A. G., Paris, an improved treatment of natural phosphate of lime for several purposes.

1207 Puls, F., Hackney Wick, a mode of preparing an oxidising agent.

1214 Bell, T., Gateshead, improvements in the decomposition of the compounds of aluminium, and in coating metals with aluminium or its alloys.

1217 Clark, W., Chancery-lane, the treatment of ammoniacal waters resulting from putrefied urines, and from products extracted by the distillation of coal.

1266 Clark, W., Chancery-lane, improvements in the preparation or manufacture of artificial alizarine.

INDIA RUBBER AND GUTTA PERCHA.

1146 Stevens, C., Charing-cross, improvements in gutta percha and india rubber toys.

1166 Hunt, J. R., Wandsworth-road, improvements in the manufacture of gutta percha and compounds thereof with other matters and substances.

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962 Mingaud, P., Paris, improvements in obtaining jellies, syrups, and drinks from the tree, "Arbutus unedo" or "Arbousier."

1079 Meyer, J., Berlin, certain new chemical combinations, and for the application thereof to fixing aniline and pigment colours in printing and dyeing, to tanning, waterproofing, and other industrial purposes.

1087 Roussin, F. Z., Paris, colouring matters derived from napthalamia, cinitro-napthalamia, and trinitro-napthalamia, and application of such colouring matters to the dyeing and printing of fabrics.

1126 Palmer, W., Brighton, improvements in apparatus for facilitating the imbibing of liquids.

1144 Newton, W. E., Chancery-lane, an improved lubricating compound.

1149 Jarlot, J. B., France, certain improvements in machinery for the manufacture of artificial fuel.

1162 Nicholls, H. M., Essex-street, Strand, an improved instrument for withdrawing corks from bottles when acting as stoppers therein.

1177 Johnson, J. H., Lincoln's-inn-fields, improvement in the decolouration and disinfection of liquids, and in the apparatus to be employed therein, which improvements are also applicable to the manufacture or production of drying oils.

1193 Zenner, D., Newcastle-upon-Tyne, improvements in purifying lead.

1211 Clark, W., Chancery-lane, improvements in corking or stoppering bottles.

1231 Johnson, J. H., Lincoln's-inn-fields, improvements in apparatus for the manufacture of aerated waters, and in vessels or receptacles for containing the same.